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SYDNEY, SATURDAY, OCTOBER 8, 1955

No. 15



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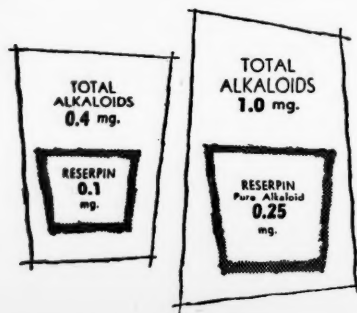


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Combined Meetings of Sections.

SECTION OF MEDICINE AND EXPERIMENTAL MEDICINE AND SECTION OF SURGERY.

Chronic Indigestion.

A COMBINED MEETING of the Section of Medicine and Experimental Medicine and the Section of Surgery was held to discuss chronic indigestion.

I. J. Wood (Victoria) read a paper entitled "The Problem of Chronic Indigestion". He said that Dr. R. K. Doig and he had given thought to the questions "Is gastrointestinal disease common in Victoria?" and "What are the commonest causes of dyspepsia?". In order to answer those questions they had sent a questionnaire to 19 practitioners well known to them. Each was asked to report on 100 consecutive patients, excluding children aged under fourteen years and obstetrical patients. Full reports on 1810 patients were received—55% males and 45% females—of an average age of fifty years. The following diagnoses had been made: respiratory disease (16%), cardiovascular disease (14%), gastrointestinal disease (11%), skin disease (11%), trauma (11%), genitourinary disease (9%), locomotor disease (9%), neuropsychiatric disorder (8%). There was a prevalence of males in the traumatic group (67%), and of females in the genitourinary (72%) and neuropsychiatric (66%) groups—such was modern life.

Dr. Wood went on to say that among 202 patients reported in the survey as complaining of "dyspepsia", the following diagnoses had been made most frequently: gastro-enteritis (22%), peptic ulcer (18%), functional dyspepsia (18%), gall-stones (9%), appendicitis (6%), chronic gastritis (5%), infectious hepatitis (2%). The remaining 11% suffered from one of a wide variety of conditions including cardiospasm, diaphragmatic hernia, carcinoma of the colon, diverticulitis, ulcerative colitis, alcoholic hepatitis, carcinoma of the pancreas, and remote causes such as coronary occlusion and cardiac failure. The symptoms most frequently reported were pain (73%), flatulence (43%), vomiting (34%) and diarrhoea (24%). No direct question was asked regarding the frequency of alcoholism as an aetiological factor, but it was recorded that alcoholic hepatitis was the diagnosis in only three cases. Dr. Wood said that clinical experience in Victoria convinced them that alcoholism played a much more prominent role.

Dr. Wood pointed out that with two exceptions the survey therefore supported the four subjects chosen by the committee for discussion at the meeting—namely, peptic ulcer, gall-bladder disease, pancreatitis and the psychosomatic aspects of chronic indigestion. The two exceptions were the omission of gastro-enteritis and the inclusion of chronic pancreatitis. It would be recalled that gastro-enteritis had been observed in 22% of the gastrointestinal

group. That prevalence of gastro-enteritis should be borne in mind when they were planning for the future. They should resolve to improve the hygiene of the community by making every endeavour to discover the organisms or the chemical toxins responsible for the illnesses under discussion. In Victoria the Health Department had greatly improved food preparation. With regard to the inclusion of pancreatitis in the symposium, it was the firm belief in the Clinical Research Unit at the Walter and Eliza Hall Institute and the Royal Melbourne Hospital that the less debilitating syndrome of chronic pancreatitis was far from rare, and often eluded diagnosis.

Dr. Wood finally discussed the method of diagnosis employed in the survey. He said that, in the gastro-intestinal group, the diagnosis had been made chiefly on clinical grounds in 68% of the cases, by radiological examination in 27%, and by pathological tests in only 5%. It might well be that the standard of diagnosis and treatment would be improved by enhancing appreciation of the scope and value of the various pathological tests, and by providing additional facilities for their performance. Clinicians should resolve to pay increasing attention to the psychosomatic aspects of disease.

A. W. MORROW (New South Wales) discussed peptic ulceration as a cause of chronic indigestion; this paper was based on a survey of all the admissions for peptic ulceration to the Royal Prince Alfred Hospital from January, 1950, to June, 1954. There were 1458 admissions; 664 of the patients were suffering from gastric ulceration and 794 from duodenal ulceration. Males predominated in both groups, 3:2 in gastric disease and 3:1 in duodenal disease. Approximately 25% of all the patients were aged over sixty years.

Dr. Morrow stressed the clinical features, and said that pain occurred in 80% of cases. Food-pain relationship was very variable and of no value in differentiating gastric from duodenal ulceration. Nausea and vomiting were infrequent in uncomplicated disease other than pyloric channel ulcer. Weight loss was extremely variable, and excessive loss was not indicative of carcinoma. Haemorrhage was the first sign or symptom of ulcer in 41 of 311 patients with proven ulcer admitted to hospital because of haemorrhage.

Dr. Morrow then discussed the differential diagnosis of carcinoma, gastritis, hiatus hernia and functional dyspepsia. He said that the combination of radiography and gastroscopy was usually adequate to exclude carcinoma; but failure to show any response to intensive medical therapy within three weeks was very suspicious. He mentioned the occurrence of ulceration in adolescence and in pregnancy, and stressed the importance of recognizing concomitant gastric and duodenal ulceration.

K. W. STARR (New South Wales) read a paper on dyspepsia associated with gall-bladder disease. He said that the cause of gall-bladder disease was unknown, but present evidence suggested that it was the more frequent component of a pathological complex of metabolic origin, with secondary obstruction and infection, involving the pancreas, the lower end of the common bile duct and the liver. It was important to ascertain the state of those viscera before performing cholecystectomy. The absolute indications for surgery were gall-stones and biliary colic. All other associated conditions should be evaluated if the post-cholecystectomy syndrome was to be avoided.

NEVILLE G. SUTTON (Queensland) read a paper entitled "Pancreatitis as a Factor in Chronic Indigestion". He said that in practice the pancreas was rarely envisaged as the cause of abdominal discomfort, but that he suspected that it should be given much more consideration. There were four ways in which pancreatic disorder might give rise to symptoms. Diminution of its external secretion, if gross, caused signs of indigestion; diminution of its internal secretion, caused by chronic pancreatitis, could cause late, mild diabetes; not only cancer but nodular pancreatitis could cause pressure on the common bile duct; and inflammatory pancreatic disease could cause visceral reflex disturbances such as gastric hypersecretion and various types of spasm.

Professor Sutton then said that the pancreatic lesions which could cause indigestion were first, chronic relapsing pancreatitis, whether it arose from traumatic, virus, reflex, chronic nutritional or metabolic causes; pancreatic lithiasis, cysts and pseudocysts might be sequelae of chronic pancreatitis. Carcinoma of the pancreas was often regarded as presenting with painless jaundice, but pain was usually the first symptom; it might present as a persistent dull ache starting in the epigastrium and passing through to the back, or as a spasmodic pain felt in the middle of the abdomen and radiating up into the chest, or as a colicky pain in the right hypochondrium and radiating to the right subscapular region.

R. K. DOIG (Victoria) presented a paper on psychosomatic aspects of chronic indigestion. He said that the dramatic development of medicine in the past hundred years had been based on a mechanistic philosophy of science, and teaching and practice had rested on the associated concept of disease as a separate entity. It ignored, to a large extent, the patient as an individual or the concern with which he was managed. Recently the word psychosomatic had been introduced in the study of certain diseases such as ulcer, colitis, eczema and diabetes, in which both physical and psychological factors were relevant, rather than one alone. In a wider sense it was used in the holistic concept of disease as variation from the normal.

Three lines of evidence showed that certain diseases were related to difficult life situations and emotions. Careful and complete history-taking provided the first line of evidence. That meant the recording not only of data on symptoms, but also of data on the patient's emotional and physical make-up and development. Observed data on the current life situations and symptoms showed more precise relationships. Those methods had been particularly useful in subjects with fistulae of stomach and large bowel. On occasion it had been possible to observe the development of gross pathological changes in the mucosa during certain periods of difficulty in the life of the patient. Finally, in the experimental sphere, feeling states might be induced by interview and the behaviour of the patient compared with a previous control period and a subsequent period of reassurance. Such studies had been made on patients with cardiospasm, duodenal ulcer, gastritis, constipation and diarrhoea, and ulcerative colitis; and on patients with regional enteritis and various forms of steatorrhoea, although without studies of induced emotional changes. There was, therefore, good evidence that many diseases of the gut were associated with life situations and emotions.

In duodenal ulcer, symptoms had been related to times of special difficulty in the patient's life. In respect to gall-bladder disease it was highly likely that motility of the biliary tract was altered in certain emotional states, but technical difficulties had made it impossible to demonstrate such a relation. On the other hand, there was good evidence that the concentration of cholesterol in the blood changed with diet, infections and certain emotions. There was no direct evidence about pancreatitis, but the relationship with alcoholism and hypertension was suggestive. A brief survey of patients seen by general practitioners showed that psychosomatic diseases were common in all fields.

In conclusion, Dr. Doig said that the psychosomatic concept of disease was significant in treatment, and in the evaluation of treatment. The new drug or new operation might be credited with improvement properly due to enthusiasm by the doctor, the effect of something new to the patient or the greater detail of follow-up visits and investigations. In treatment, according to a careful comparison, psychotherapy for ulcerative colitis had given better results than conventional methods in terms of fewer deaths, operations and complications, with less time in hospital, but similar numbers of visits.

W. E. KING (Victoria) said that at present the influence of psychogenic factors on the whole alimentary tract was being widely stressed, not only in relation to the stomach, but in relation to the large and small intestines. Anyone

with experience would know the real importance of this, and of course results with psychotherapy aided by the judicious use of sedatives and antispasmodics could be most gratifying. The real debt to workers in that field should be acknowledged. But it was necessary not to swing too far in the opposite direction and so do harm to the psychogenic concept. Dr. King said that in one fortnight earlier in the year four patients of his had been submitted to laparotomy. There had been abundant psychogenic factors or stresses present in all cases, and yet two patients had penetrating ulcers, one had a local perforation with a retrogastric abscess, and the last had a malignant ulcer. Obviously, it might be said that those people had not been investigated, but the other factor all had in common was adequate X-ray investigation by competent radiologists.

Dr. King went on to stress a few points in the clinical diagnosis of chronic dyspepsia. He said that the man who had recurring bouts of pain, but who was free from pain in the intervals and felt well, usually had an ulcer. The patient who had pain on waking in the mornings or on getting up hardly ever (almost, one could say, never) had an ulcer—that patient usually had nervous dyspepsia. Belching was not a symptom of biliary disease; usually it meant aerophagy, unless an obstructive lesion was present, and then there would be other evidence for that. Finally, a common and often overlooked symptom of a diseased gall-bladder was a feeling like a heavy weight ("a brick" was the usual description) when the patient ate a meal or soon afterwards, despite a desire for food at the start of the meal. Presumably that was due to a reflex type of pylorospasm. Dr. King had often known relief to be afforded by the administration of both the belladonna group and the anticholinergics.

WILFRED EVANS (New South Wales) said that he had been particularly interested in Dr. Morrow's remarks on hæmorrhage from peptic ulcer. Most doctors had had the experience of attending post-mortem examinations on patients who had been under their care and had died while being treated in the hospital from hæmorrhage from peptic ulcer. The post-mortem examination usually showed a subject of sixty years of age or over with a chronic peptic ulcer, with indurated edges and a thickened eroded arterio-sclerotic vessel in the bottom of the crater. The first reaction of the attending physician was to ask himself why he had allowed it to happen, and, secondly, what was the indication for surgery. Dr. Morrow had answered those questions. Dr. Evans went on to say that some years previously at the Sydney Hospital an analysis had been made of cases of hæmorrhage from peptic ulcer during the previous nine or ten years. The mortality rate was then 10%. The average age at death was sixty-three years, and only 1% of deaths occurred under the age of fifty years. Dr. Evans said that those figures supported the speaker's views that peptic ulcers in patients aged under fifty years seldom caused death and required only routine treatment. However, occasional cases did occur in which persistent and profuse bleeding took place and operative treatment was needed. At the same time, there was one group of cases which constituted an acute surgical emergency; the patients were aged over sixty years, had a history of chronic ulcer and had profuse or recurrent bleeding. They should be given transfusions of packed red cells and operated upon as soon as possible, to prevent the onset of a sudden massive and fatal hæmorrhage.

SECTION OF MEDICINE AND EXPERIMENTAL MEDICINE AND SECTION OF SURGERY.

The Modern Treatment of Tuberculosis.

A COMBINED MEETING of the Section of Medicine and Experimental Medicine and the Section of Surgery was held to discuss "The Modern Treatment of Tuberculosis".

C. H. FITTS (Victoria) said that in 1946 he had given a lecture with the title "The Modern Treatment of Tuberculosis", and that there had been scarcely a paragraph in that lecture which would serve for the present lecture.

Dr. Fitts first described his past experiences with artificial pneumothorax, gold injection, phrenic avulsion, thoracoplasty and plombage. Then the last war had brought new problems and new methods, and now a patient might receive different operative treatment and different dosages of the three accepted drugs in different parts of the world. Where did the truth lie? It did not lie wholly in any authority, and the only rule was to use the smallest amount of the toxic drugs that would produce an adequate response. There was no need for delay or lengthy preparation; a patient could be in hospital for two weeks for acclimatization before operation, and then six weeks after operation he could be transferred to a sanatorium, whence after six months he could be returned to normal life. There was a tendency to use more powerful measures than were needed, which might lead to the development of resistance in milder cases, but in severe cases every available means was needed. Dr. Fitts ended with a plea to regard the patient as an individual.

H. D'ARCY SUTHERLAND said that the introduction of chemotherapy had produced a change in the treatment of tuberculosis, but only because it had been superimposed on the established background of sanatorium treatment, case-finding programmes, contact surveys *et cetera*. The disease appeared to have separated into two types, the old-fashioned contagious variety and the modern variety, which could be brought more under control by chemotherapy. Those and the intermediate varieties gave rise to a wide range of pathological states requiring treatment.

Dr. Sutherland said that surgical treatment offered problems of assessment and timing; and when there was any doubt about it, postponement was desirable. Ten years previously surgery had been merely a measure for salvage, but today it was a mean towards return to normal living.

Dr. Sutherland then discussed the indications for operation, illustrating his remarks with slides and case histories.

W. COTTER HARVEY said that he was sure everyone had enjoyed the wise and autobiographical discourse by Dr. Fitts. Some might have felt perhaps that he had not told them exactly how he treated pulmonary tuberculosis nowadays, but Dr. Harvey would especially draw attention to Dr. Fitts's concluding words—Dr. Fitts was prepared to sit down and talk to his patients, and to listen to what they said. That appreciation of the patient and of his personality was a very human approach which merited emphasis in these days when there was a tendency to treat patients by rule of thumb. Dr. Sutherland had shown the dynamic and decisive approach of the surgeon, with definite indications for surgery. With all of those Dr. Harvey was in complete accord, and he believed they were a concise expression of modern surgical thought on the problem. He would, however, demur at his suggestion regarding the changing nature of the disease. More patients were living longer, but the pathological processes had not altered. In those the text-books were still up to date, though, of course, obsolescent in regard to therapy. In lecturing to students annually, he was in the habit of saying, in regard to treatment, "this is how we treat this year, but next year it may be different". The therapy of pulmonary tuberculosis was in an intensely dynamic phase, and it was well not to be dogmatic. At the moment, at least four trends could be discerned, but they should be called no more than that: (i) To treat all active tuberculosis, including pleurisy with effusion, by chemotherapy. At that point a note of caution should be inserted. One should make quite sure the disease was active. There was no logic in treating a static lesion with a bacteriostatic. In many cases picked up on mass X-ray surveys it was very difficult to decide activity. (ii) To prolong treatment up to twelve months or longer. Some authorities regarded twelve months as a minimum, which underlined the need for a correct "activity-diagnosis". (iii) To permit greater freedom of activity—for example, (a) no rigid bed rest if no constitutional symptoms, and (b) complete rehabilitation, including return to work, while under "cover" of chemotherapy. (iv) To move away from collapse measures and towards excisional surgery, especially in (a) persistent cavitation, (b) residual necrotic lesions above, say, two

centimetres in diameter. Dr. Harvey said that the importance of timing in surgery needed constant emphasis, but sometimes the surgeon's hand was forced. The "crash pneumonectomy" was a correct and often life-saving procedure. Institutional treatment, at least as a preliminary, was essential. Domiciliary treatment was only second best and, with ample beds now offering in Australia, was no longer necessary. Much had been made at the recent Asian-Pacific Conference of the value of isoniazid, and its use as a single drug had been sanctioned. The question of drug resistance had not been mentioned, and it was of great interest, therefore, to note the findings of a recent Medical Research Council study (*Thorax*, June, 1955). The concluding sentence read as follows: "Isoniazid should, therefore, be given only in combination with suitable doses of other drugs." While it was not possible to say who was right, it seemed to illustrate the importance of caution before changing standard chemotherapeutic procedures. One new antibiotic should be mentioned, as it undoubtedly had a place in the treatment of patients resistant to other antibacterials, and that was viomycin.

Dr. Harvey said that it was essential to know the natural history of the disease, which must induce a sense of humility. Many people recovered on no treatment at all, and many people were going to relapse and die on the best possible modern therapy. Finally, it should be noted that the treatment of tuberculosis had not been simplified by all the recent spectacular advances. It was still safest to have patients under the care of an experienced tuberculosis physician.

SIR HARRY WUNDERLY (Canberra, A.C.T.) said that tuberculosis was not "on the run". There was still plenty of tuberculosis in Australia. The campaign to combat tuberculosis would be more and more in the hands of the chest physician rather than in the hands of the public health authorities.

SECTION OF MEDICINE AND EXPERIMENTAL MEDICINE AND SECTION OF SURGERY.

Arterial Grafts for Occlusive Arterial Disease of the Lower Limbs.

A COMBINED MEETING of the Section of Medicine and Experimental Medicine with the Section of Surgery was held to discuss the subject of the use of arterial grafts in occlusive arterial disease of the lower limbs.

A. J. BARNETT and K. N. MORRIS (Victoria) presented a paper entitled "Use of Arterial Grafts for Occlusive Arterial Disease of the Lower Limbs".

In the section on the medical aspects of the subject, it was pointed out that other methods of treatment of severe ischaemia of the legs were of limited value and relatively useless in claudication. The technique of vascular grafting had raised hopes that benefit might be conferred on subjects who could not otherwise be helped. However, the method had grave limitations because of the nature of the disease (usually widespread) and the general condition of the patients. In general, the criteria for selection of patients for arterial grafting were the following: severe symptoms, reasonably good general condition of the patient, and an anatomically resectable block (a block in a large artery with a fairly good lumen above and below). An outline was given of the method of assessing a patient for operation by investigating his general condition and the state of the circulation in his lower limbs. It was said that, in addition to certain other tests, arteriography should be performed to demonstrate the state of the vessels in the affected limb or limbs. Some patients required immediate operation, but most could be operated on at an elected time. The patient could usually be discharged from hospital in about three weeks and return to work after another three weeks. Long-term anticoagulation therapy might be necessary to prevent further arterial occlusions.

Brief data were presented on 10 patients treated by arterial grafting. In all, the immediate results were good. At the time of their last examination (six to twelve months after operation in nine cases), six of the 10 patients treated by arterial grafting had been cured or greatly relieved of their symptoms. One patient had died (with the graft still functioning prior to death about six months after operation). Three patients were alive and had not benefited, their grafts having become blocked.

Three illustrative case histories were presented. The first showed an ideal result in a relatively young man. The second (that of the patient who had died) showed the difficulties and disappointments which might occur when the operation was performed on elderly people in poor general health. However, the third case showed that a superbly satisfactory result might sometimes be obtained even in a most unlikely subject.

The place of arterial grafting in treatment was discussed. It was concluded that, in spite of the difficulties and lack of uniformly good results, the method was worth while. However, it was best employed in a few centres with staff particularly interested in the procedure.

In the section on surgical procedure, it was pointed out that the material used for arterial grafting was obtained from the bodies of young subjects who had died from a non-transmissible cause. The arteries were rapidly frozen and stored in a "deep freeze" until required for use. They were then quickly thawed. In seven cases arterial grafts had been used to overcome obstruction of the lower part of the superficial femoral artery. In two patients the block was in the popliteal artery, and in one other the obstruction was situated at the junction of the external iliac and the femoral arteries. In the earlier cases the thrombosed portion of the artery was excised, but latterly it had been left *in situ*. That simplified the operation, safeguarded the vein and produced less disturbance to the collateral circulation.

It was inevitable that the graft should be anastomosed to atheromatous host vessels both above and below. When an atheromatous vessel was cut or sewn, it was easy to cause atheromatous plaques to hinge forwards into the lumen of the vessel. That was probably a common cause of early post-operative thrombosis. A crack in the edge of the host vessel might readily be mistaken for its lumen, or for the line of apposition of the host and graft vessels. To prevent hinging, needles should always be passed through atheromatous plaques from the inside to the outside. Interrupted sutures produced a better result than continuous sutures, because any inequality between the circumferences of the graft and host vessels was taken up evenly all round the anastomosis line. The direction of needle travel could be varied at will, so that it need never pass through an atheromatous plaque from the outside to the inside, and in awkward corners it could be placed with greater accuracy.

In the first three days after operation the whole blood coagulation time was maintained at about twenty minutes by the continuous intravenous administration of heparin. The wound was left open during that period and then closed by secondary suture. It was probable that that heparin therapy was not necessary.

In this series of patients there was no instance of thrombosis of the graft in the immediate post-operative period. In four patients the graft thrombosed between four and twelve months after operation. Two of these disappointing results were in cases in which poor grafting material had been used. These two patients had below-knee amputations performed. The threat of amputation had been present before the original operation, because the limb in each instance was extremely ischaemic. Another patient had undergone a re-grafting procedure and was now well.

The 10 patients subjected to the operation had all had a limb which was either a severe handicap or was threatened by imminent necrosis. Six of them were extremely pleased with the result that they had obtained, and a seventh had a graft that was still patent when she died of acute pancreatitis. One patient was little better than he had been originally, and two had finally come to amputation.

The conclusion was that the operation was well worth while, and that even better results would be obtained in the future.

ALAN SHARP (New South Wales) said that for the treatment of the patients under discussion there were available both conservative and operative methods. In general terms, the conservative measures were designed to improve collateral circulation and to prevent the extension of thrombotic episodes by means of heparin. The operative measures were designed to improve the collateral circulation (by sympathectomy) or to replace main channels (by grafting). Dr. Barnett and Dr. Morris had demonstrated a splendid way in which the collateral circulation might be improved around a blocked vessel, without damaging existing collaterals. Dr. Sharp went on to say that in order that they might be orientated about the various methods and their place in treatment, it was important to realize that the ischaemia of the leg might be manifested by claudication and/or coldness of the limb, particularly the first. Minor trauma might precipitate gangrene. The usual causes of ischaemia were, first, the acute emergencies of trauma and embolus, requiring urgent treatment, and, second, obliterative disease, which was often segmental when due to Buerger's disease and diffuse when due to atherosclerosis, and did not require urgent treatment. The method of treatment must depend upon many things, amongst which were the following: the age of the patient (many with obliterative disease were pensioners), the site and type of the block, the rate of the blocking, the collateral circulation and blood pressure. Dr. Sharp agreed with Dr. Barnett that the results of treatment with vasodilator drugs were evanescent and disappointing, and that sympathectomy might not help in the treatment of claudication. Nevertheless, it sometimes and surprisingly did so—especially in the case of high arterial blocks. However, sympathectomy was valuable in those cases also, because of the improvement to be expected in the skin circulation after the operation. Dr. Sharp suggested that that could have been carried out in the cases under discussion before the grafting to improve the natural collateral circulation. He said that he was greatly impressed by Dr. Morris's surgical technique and looked forward to the follow-up results, especially in cases in which "collateral" grafting could be carried out.

R. B. BLACKET (New South Wales) said that it was always gratifying to hear of advances in the therapy of diseases which were generally regarded as incurable. He pointed out that atheroma was a progressive disease, and asked what was the expectation that a patient with one block would have another. He asked Dr. Barnett what was the percentage of patients with peripheral vascular disease who would at present be regarded as suitable for surgery. The results in the 10 patients presented showed that after six months two-thirds of the patients were benefited, and after twelve months the percentage of successes was somewhat less. In view of the diminishing return with time, he asked whether it might not be wise to use a series of controls in the future.

SECTION OF NAVAL, MILITARY AND AIR FORCE MEDICINE AND SURGERY AND SECTION OF OTO-RHINO-LARYNGOLOGY.

Otitic Barotrauma.

A combined meeting of the Section of Naval, Military and Air Force Medicine and Surgery and the Section of Oto-Rhino-Laryngology was held to discuss the subject of otitic barotrauma.

Otitic Barotrauma Amongst Air Hostesses.

F. S. PARLE (Victoria) presented a study on the incidence of otitic barotrauma as a disability in a group of 100 air hostesses. He found that 24 members of the group had suffered from one or more attacks of otitic barotrauma. In every case the attack was associated with a head cold or other upper respiratory tract infection. Dr. Parle stressed the importance of careful selection of air hostesses,

pointing out that anyone suffering from chronic infection involving ear, nose or throat should not fly as an air hostess until the condition had been adequately treated. In the training of air hostesses great emphasis should be placed on the principles of inflation of the middle ear cavity with changes in barometric pressure and on the hazards of flying with a head cold or other upper respiratory tract infection. When, otitic barotrauma occurred, consideration should be given to correcting any abnormality present or to the use of an appropriate vaccine.

Acute Otitic Barotrauma.

FRANK ELLIS (New South Wales) read a paper on acute otitic barotrauma, based largely on a critical and systematic review of the literature on the subject by Captain Reed W. Hyde of the United States Air Force. Dr. Ellis said that Armstrong and Heim had first described *aerotitis media* as a clinical entity in 1937; their original definition, which was still generally accepted, was "an acute or chronic traumatic inflammation of the middle ear, caused by a pressure differential between the air in the tympanic cavity and that of the surrounding atmosphere". The condition had since come to be called either acute otitic barotrauma or *aerotitis media*, but there was a difference between the terms; barotrauma was the acute middle ear abnormality due to dynamic insufficiency of the Eustachian tube, whereas *aerotitis media* was the entity of fluid effusion in the middle ear occurring as a late result of such tubal insufficiency.

Dr. Ellis went on to discuss the physiology of the Eustachian tube with particular emphasis on the question of autoinflation of the tube during flight. He pointed out the importance of selecting aircrew personnel with adequate powers of aeration of their middle ears and said that in that regard, doubtful cases were difficult to detect without some trial of the subjects in low-atmospheric pressures and immediate post-flight examination by otoscopy. Engorgement of the tympanic membrane indicated dynamic insufficiency of the Eustachian tubes. Allergic manifestations in the nose and naso-pharynx should be carefully assessed. Among flying personnel adequate instruction in autoinflationary methods was stressed.

Dr. Ellis referred to the clinical features of the condition and said that otalgia and deafness were the main symptoms; they were usually corrected by aeration of the middle ears by such measures as (a) re-ascent (by aircraft or in a pressure chamber) until aeration was achieved, followed by gradual descent, and (b) tubal inflation—first, autoinflation after application of vasoconstrictors, and second, artificial ventilation by politizerization or Eustachian catheterization. Methods of prevention of *aerotitis media* were pointed out with particular reference to the careful instruction and discipline of persons being trained and study of the effects of reduced barometric pressures; the related role of head colds and sore throats was discussed. For remedial treatment, irradiation of naso-pharyngeal lymph tissue, correction of dental malocclusion and allergic investigation and treatment were described as being often of great value.

Discussion.

R. G. MACKAY (New South Wales) considered that the difference in incidence between pilots and hostesses might be due to bias in certification. Pilots did not want ear trouble mentioned for fear of losing their licences. Dr. Mackay referred to the importance of the time interval before Eustachian blockage was relieved. If the obstruction was not cleared in an hour or so it was likely to persist for several days. In those cases he considered paracentesis the appropriate treatment.

E. H. ANDERSON (New South Wales) gave two reasons for the continuance of otitic barotrauma in pressurized aircraft—(a) the fact that the cabin altitude was still up to 6000 feet, and (b) the rate of depressurization. He said that the training of cabin attendants was important; they should watch for the first indication in passengers. The measures to be applied in treatment were the use of vasoconstrictors, autoinflation, and a rise in altitude of the

aircraft. Dr. Anderson doubted whether the rate of descent was very important in the causation of the condition.

G. HALLIDAY (New South Wales) said that his own experience was that the number of patients with barotrauma had diminished considerably in the past five years. In most cases in his experience the condition had been associated with overseas flights and with acute sinusitis. He believed that people with head colds would seldom be affected if they used a vasoconstrictor before descent so as to ensure that they could breathe through both nostrils.

W. L. RAIT (Victoria) said he had encountered many cases in service personnel in which blockage had occurred in the last 3000 feet of descent.

J. C. LANE (Victoria) said that Dr. Parle's figures would indicate an incidence of about one working day lost per hostess *per annum*, so that the problem was hardly a serious one. An important finding of Dr. Parle's study was that failure to ventilate the ears at routine examination did not predict subsequent attacks of barotrauma, since the rates for failure to ventilate were the same (and quite high at about 30%) for both groups. That would suggest that the requirement for demonstrably patent Eustachian tubes at the medical examination of the pilot was perhaps pointless. Early results from current work in Adelaide indicated that the frequency of swallowing was enormously variable, and the classical figure of once per minute was quite unfounded.

Dr. Parle, in reply, said that hostesses were instructed to hand out barley sugar at the very beginning of descent. If the descent was a long one, extra barley sugar could be given out. An attempt had been made to estimate the incidence from hostesses' reports on trans-Pacific flights. The results showed the rate to be one in 1500, but he thought the true rate was two or three times that figure.

SECTION OF NEUROLOGY AND PSYCHIATRY AND SECTION OF OBSTETRICS AND GYNÆCOLOGY.

Problems of Marriage.

A COMBINED MEETING of the Section of Neurology and Psychiatry and the Section of Obstetrics and Gynæcology was held to discuss "Problems of Marriage".

LORNA LLOYD-GREEN (Victoria) said that there was need for stimulus within the medical profession to cope with the problems of marriage. The problems might be classified into three groups: social, psychological and physical. Those groups were often interrelated in an individual case. Lack of preparation for marriage was often the cause of trouble. Local conditions were rarely the cause of such symptoms as dyspareunia and frigidity.

There were two groups of gynaecological patients concerned—the prolific and the childless. Adequate advice on family spacing might be given to the former group, according to their religious principles and the reliability of the method for the individual. Involuntary sterility probably occurred in one marriage in ten, and in about one-third of those the patient might be helped by treatment. About 50% of women might be expected to conceive within the first year of marriage, and therefore patients who sought help on the question of infertility at the end of the first year should receive treatment rather than be forced to wait the arbitrary two years suggested by many workers in this field. The husband and wife should be investigated at the same time, as up to 30% of men were responsible for the failure of conception. The opinion of a genitourinary specialist should be obtained if the result of the seminal assay was unsatisfactory after several examinations.

The general health of the wife was important, and whenever possible any disease process should be eradicated before treatment was started. The basal temperature chart would show the occurrence and time of ovulation and might help to diagnose pregnancy. Caution must be exercised lest the keeping of a daily chart and the timing of

sexual intercourse created an anxiety state in relation to conception. The cervix might inhibit the progress of the sperms if a polypus or cervicitis was present. Cervical stenosis was rare except in cases of secondary sterility following curettage for post-partum hemorrhage with associated infection. Retroversion *per se* was a rare cause of sterility.

The tubal status should be assessed early in the investigation, as about 30% of women suffered from some form of tubal obstruction. A Rubin's test might be performed with carbon dioxide to a safe pressure level of 240 millimetres of mercury. Air should never be used because of the danger of embolism. Hystero-salpingography might diagnose the site of tubal obstruction, tuberculous salpingitis or a submucous polypus. Oil should never be injected into the uterus in the presence of cervicitis or of suspected salpingitis.

Hormone therapy was of limited value. Artificial insemination with the husband's semen was rarely of value except in cases of impotence. Donor insemination produced a serious legal and moral question.

There should be close liaison between the gynaecologist and psychotherapist, for anxiety might cause pelvic congestion with resultant anovulation and changes in the cervical mucus. Irregular uterine motility might interfere with nidation. "Dexedrine" administered to the overweight patient might also relieve depression.

Adoption might be a happy solution to a barren marriage, but should never be undertaken in order to salvage a marriage, as the child might suffer.

In conclusion, Dr. Lloyd-Green said that the incidence of marriage problems might be reduced, firstly, by education of the medical student, secondly, by education of the individual in the sociological aspects of home-making and by adequate sex education, and finally by pre-marital examination with advice on matters of sex and marriage guidance.

JOHN H. HURT (Victoria) presented a paper on the psychiatric aspects of marriage, including the emotional relationships, the sexual problems and, finally, the management of those problems. He said that he had attempted to create an understanding of marriage by giving a psychological explanation of love and tenderness, and the meaning of falling in love. Love was divided into two parts, (i) the sensual love and (ii) the tender love. The sensual love was largely a biologically determined need, and the tender love was idealistic in that the lover saw in the love object the material objectification of his ideal. That ideal was modelled in his own childhood by the absorption into his ego-ideal of the infantile image of his parents or teachers. Children were alleged to go through a phase in which they resented the parent of the same sex, and desired the parent of the opposite sex. With the passage of time the normal child sublimated that desire, but the individual of neurotic personality was incapable of that. As a result of the abnormality, the neurotic was unable to experience tender love, and any feelings of affection he felt towards a mate were tinged with guilt, because he unconsciously feared what would happen at the fulfilment of his incestuous wishes. It could thus be seen that many marriage problems were the result of neurotic behaviour and of impossible unconscious expectations.

The reasons for marriage and for monogamy were then briefly discussed. There again the reasons expressed by the average and the neurotic individual were briefly mentioned.

Dr. Hurt said that the section concerning the conflicts which might arise in marriage would be dealt with as fully as possible in the time available. That meant, of course, that there must be omissions, but the major situations would be mentioned. Sexual difficulties were given pride of place, particularly impotence and frigidity, and the problems which could arise in such cases. Various types of jealousy were discussed, and reasons for infidelity were put forward. Dr. Hurt said that escape marriage situations, or as they are sometimes termed "alibi marriages", were not as uncommon as one would think. That type of marriage was used as a defence against homosexuality, transvestism, masochism and exhibitionism.

It might be used by the "passive feminine male", marrying against feminine identification. Marriage was often a defence against masturbation, and might be also a form of self-punishment. That form of marriage was often found in the "saviour complex", when a woman or man married a "fallen person". Unresolved aggression was frequently found when a person married for spite. Such people might marry someone beneath their social status or of another religion or political belief, in an unconscious effort to spite their parents or educators.

It was evident that the majority of marriage problems arose in neurotic individuals because of their abnormal development and emotional instability, or unconscious expectations. The neurotic person frequently showed two reasons for marriage: (a) to repeat an unconscious infantile fantasy; (b) to defend himself against a particular unconscious conflict of conscience.

Dr. Hurt said that the management of problems of marriage was divided into prevention and cure. Prevention was obviously the best attack, because the prognosis in the established case was often poor, and the treatment was difficult. Marriage preparation was essential, and negative influences, ignorance, crude technique and deviated psychological patterns must be corrected.

From the treatment viewpoint the whole personality must be considered. Psychological inhibiting factors, endocrine deficiencies, gynaecological maladjustments and lack of technical knowledge must be investigated. Fear and anxiety must be removed, and cooperation of both partners obtained. Fortunately most difficulties responded to common-sense explanation and instruction. Marriage guidance officers were frequently helpful, but many people required psychotherapy. There was unfortunately a fair proportion of cases of poor prognosis, mostly because of immaturity, chronic neuroticism, low intelligence or no desire to continue the marriage.

W. A. DIBDEN (South Australia), who opened the discussion, said that Dr. Hurt had sketched the theoretical psychological concepts that underlay the reasons why, first, people married and, second, why problems cropped up in marriage. It was clear that ignorance in sexual matters—and Dr. Green had emphasized the importance of understanding the anatomy of one's own body and of sexual instruction prior to marriage—could account for a proportion of the problems and could be readily corrected by advice. But it was even more clear that the problems in marriage, in the great majority of cases, boiled down to the emotional problems of the two individuals involved—to the interpersonal relationship that constituted the marriage. One might argue that physical ill-health, financial and housing difficulties and the in-law problem underlay the marital problem. Dr. Dibden felt that that was only dodging the issue—the main factor was how the individual reacted to those stresses, and whether the reaction became reflected into the marital relationship. The normal person resolved his or her difficulties in their sphere; the neurotic failed to resolve them, and a problem in marital relations developed. Dr. Dibden said that he would like to develop two points. The first was Dr. Hurt's emphasis on the difficulties of treatment with the statement that the main efforts should therefore be directed towards prevention. Dr. Dibden said that a part of prevention lay in adequate sex education and instruction—a point well made by Dr. Lloyd-Green; but he did not think that that should be over-emphasized, as in the majority of cases sexual difficulties were only the outward manifestations of a deeper neurosis or character disorder. Prevention of many problems in marriage was therefore equivalent to the prevention of mental ill-health, especially of the neurotic disorders. Marital problems became part of the wider problem of mental health as a whole. A mental health programme, by aiming at better mental health in infancy and childhood, and the early treatment of emotional disorders in infant guidance and child guidance clinics, would do much to alleviate the psychiatric problems in marriage.

Dr. Dibden went on to say that Dr. Hurt had not had time to develop the effect of social influences on the problems of marriage. Marriage was primarily a social institution. Just as the quality of social pressures impinged

on the individual in the development of neurosis, so also it was not improbable that social pressures might directly influence the incidence of psychiatric problems in marriage. It was clear that the sort of problems that would arise in a Christian culture must be different from those arising in a Mohammedan culture. In the changing social pattern of the past fifty years, three sources of social stress suggested themselves: the lessened authority of the Church; the increasing emancipation of women; the greater freedom of the individual, both male and female. It would appear that individuals, especially neurotic individuals, were more ready to accept freedom than the responsibilities that went with it. That greater freedom imposed a necessity for wider adjustments between men and women and society as a whole. The neurotic, with his propensity to fail to make satisfactory adjustments and to create dilemmas for himself, tended to transfer his inadequacies into the sexual and interpersonal sphere and so create those problems in marriage that were so difficult to resolve.

D. W. H. ARNOTT (New South Wales) congratulated Dr. Lorna Lloyd-Green on her lucid paper and Dr. John Hurt on his interesting Freudian interpretation of why marriages went wrong; personally Dr. Arnott had had great difficulty in following it. He said that if they returned to McDougall, a simpler principle might offer more practical help. He pointed out that the reproductive instinct consisted of the sexual and parental components, and, in a large sense, they were separate forces. Sexual attraction tended to break up once consummation was achieved, but once the tender parental feeling was aroused, and it was only aroused by the helpless dependence of the child, that feeling rapidly became permanent and unbreakable. Marriage was a poor institution with regard to sex, but highly satisfactory with regard to parenthood. A permanently satisfying relationship between husband and wife could be brought about only by the linking up of sexual attraction with the more permanent, tender parental feeling. To achieve that, both husband and wife had to make the other feel their dependence and need of the other—not only in daily living, but also in sex too. They should actively develop a tender appreciation of each other's needs. Also, it was generally agreed that all or most neuroses were caused by inhibition of emotional expression, and certainly most personal unhappiness was due to that. Men and women should strive to be vocally and physically expressive in all phases of their life—and especially in their love-making.

O. SCHMALZBACH (New South Wales) asked Dr. Hurt what was the role of alcohol in unhappy marriages.

Dr. Hurt, in reply, said that alcoholism was a symptom rather than a disease and its cause must be investigated. Small doses of alcohol might relieve inhibitions and increase sexual responsiveness. In large quantities it was an anæsthetic and reduced sexual response.

SECTION OF NEUROLOGY AND PSYCHIATRY AND SECTION OF OTO-RHINO-LARYNGOLOGY.

Auditory Hallucinations.

A COMBINED MEETING of the Section of Neurology and Psychiatry and the Section of Oto-Rhino-Laryngology was held to discuss auditory hallucinations.

The Neuro-Psychiatric Point of View.

OSCAR SCHMALZBACH (New South Wales) considered the question of auditory hallucinations from the neuro-psychiatric point of view. In the first part of his paper were given views on the definition of hallucinations, especially of auditory hallucinations, based on psychological, physiological and psychoanalytical schools. Auditory hallucinations were described as the apparent perception of an external object not actually present; in other words, hallucinations were sensations without an external object to produce them. Dr. Schmalzbach said that the important aspect of hallucinations was the vividness of the perception and the belief of the patient in the

reality of the image. A. Lewis considered hallucinations a special instance of interplay between material substrate, inherent tendencies and past experiences. Recently the opinion had been expressed that hallucinations included not only an abnormal external perception, but also an "internal" perception, since sometimes the patient "heard in the mind" or heard "a whisper in the head". Sometimes that "internal" perception was localized inside the body. It was also assumed that auditory hallucinations might be a disorder of speech, and not perception, when the patient could hear his own whispered voice as an hallucination. An electromyogram of the vocal musculature of patients with auditory hallucinations revealed an increase of muscle potential. Since the recent work of Penfield and Jasper in connexion with the stimulation of the temporal lobe in patients with temporal lobe epilepsy, psychical hallucinations had been experimentally induced by putting the electrode on Heschl's transverse gyrus and on the posterior portion of the first temporal convolution. The dynamic psychoanalytical point of view on auditory hallucinations considered them (a) as a defence against a feeling of guilt or inferiority, (b) as an endopsychic perception and (c) as a wish fulfilment.

In the second part of the paper, occurrences of auditory hallucinations were given and discussed. A special table was prepared in which occurrences of auditory hallucinations were divided as follows: (i) in addictions and intoxications (of exogenous and endogenous origin); (ii) in psychosis; (iii) in organic brain disease (nine instances were quoted); (iv) undetermined (including post-amygdalotomy, diseases of the ear and a few others). In this part of the paper, an attempt was made to give also a few typical examples and characteristics of auditory hallucinations as they had been described by patients themselves and published in psychiatric literature. Attention was drawn to the "Autobiography of a Schizophrenic Girl", to Cutting's patient, who had tabes with psychosis, and to a patient who, under the assumed name of Jonathan Lang, published his personal experiences under the title "The Other Side of Auditory Hallucinations".

In the next part of the paper the description was given of a few instances of auditory hallucinations, particularly the vividness of auditory hallucinations in alcoholism, and in "model psychosis" caused experimentally by hallucinogens—"M. substances". In the latter, a doctor, acting as a guinea-pig, described his feelings in the following way: "One believes in hearing voices and seeing faces, but everything is one. I hear scratching and the sound of loud trumpets. What I see, I hear; what I smell, I think; I am music, I am the lattice-work. This is not a metaphor, but the perception of something coming out of me. I feel, see, taste and smell the noise of the trumpet. I am myself the noise." Then the auditory hallucinations as they occur in brain tumours were considered, and their relation to the localization of the tumour was discussed. Attention was drawn to auditory hallucinations in Parkinson's disease, and one of Dr. Schmalzbach's own cases was described. The patient was a man, aged sixty-five years, who had been suffering from Parkinson's disease for a few years. In about the last twelve months, the patient had developed auditory hallucinations of the typical paralytic type. Whether that was because of the Parkinson's disease, or apart from it, or in spite of it, was left for the discussion.

This part of the paper was rounded off by showing slides of the stimulation areas of the temporal lobe in the cases of Penfield and his co-workers. It was pointed out that the stimulating points producing psychical hallucinations had been found by Penfield to be concentrated around the first temporal gyrus.

In the third part of the paper an attempt was made to discuss the mechanism of auditory hallucinations, in which physiological and psychological mechanisms were used. The still existing controversy between the localization and the diffuse origin of hallucinations was stressed. The hypothesis of Wormser was quoted, in which use was made of so-called "suppressor areas". Dr. Schmalzbach explained that the "suppressor areas" were the zones of the cerebral

cortex capable of inhibiting motor activity and suppressing the electrical activity of the cerebral cortex. Suppression brought cortical inhibition which permitted the appearance of hallucinations, the content of which was determined by other processes. From an otological point of view, attention was drawn to the theory of Schneider, in which the author attempted to build up a theory of normal and abnormal hearing, and elaborated on it to explain abnormal auditory phenomena.

In the concluding remarks, Baruk's study on mysticism and prophetism was quoted, in which the voice of conscience, as experienced by prophets, was described. Baruk had said that those voices had been inspiring true prophets "to defend the oppressed, and to maintain the moral health of the society".

The Otological Point of View.

GARNET HALLORAN (New South Wales) said that the chronically deaf might tend towards introversion and might become psychological casualties. Head noises, usually slight, might be of such severity that the patient feared for his own sanity. Hallucinations of otitic origin were rare, and usually psychotic patients with auditory hallucinations had no demonstrable otitic defect. With lesions of the auditory nerve, according to L. M. Allen, spontaneous phenomena had been present in 20 out of 39 cases of acoustic neurofibroma and in three out of five cases of cerebellopontine angle tumour. The less highly organized auditory phenomena might be found with lesions of the ear and the auditory nerve, whereas the more highly organized forms were found with other deeper lesions.

Dr. Halloran discussed the case histories and otological findings of six psychotic patients and mentioned the findings in two patients of Allen and Tuke, but pointed out that no assessment of the mental state of the two latter patients was available. He said that auditory hallucinations might be explained (according to Gould) as the patient hearing his own automatic whispering or hearing the auditory representation of speech produced by intensified motor impulses arising from hyperactivity of his vocal musculature during thinking. Electromyograms of the vocal musculature had been taken in 84 cases. The psychotic person under tension had hypertension of his neuro-muscular speech mechanism. The patient misrepresented his own speech as an intrusion of "alien" speech or "voices". Dr. Halloran said that this theory would be untenable in one of his cases, as the patient was unable to hear a loud whisper. As opposed to Gould's theory, Roberts, Greenblatt and Solomon had concluded that auditory hallucinations were not consistently accompanied by vocal myographic discharges. D. E. Schneider believed that the tympanic plexus and the entire cephalic vegetative ganglion system were concerned as a peripheral mechanism, supporting the far more important central integrating tract—the *tractus solitarius*. Evidence was very suggestive to the effect that deafness, tinnitus and vertigo might be due to neuritic trophic disease of those sympathetic fibres of the fifth, seventh and ninth cranial nerves which entered into the formation of the tympanic plexus, situated over the promontory of the cochlea. The tympanic plexus was implicated on the basis of proven dental relationships such as the abolition of tinnitus after removing the reflex irritation in dental impactions. Schneider also believed that the basic mechanism supporting hearing was not the indispensable auditory branch of the eighth nerve. If tinnitus was a sound in the auditory nerve itself or in the cochlear capsule due to changes in vascularity caused by disease of the tympanic plexus, then section of the eighth nerve should abolish the sound in all cases; but probably not more than 30% of all patients who underwent operation were relieved by section of the eighth nerve. Schneider maintained that the cranial parasympathetic system was the main highway for the somatic resolution of unresolved psychic tensions. That brought the problem of deafness into close relationship to the function of the *tractus solitarius*, its nucleus and the projections of its secondary visceral fibres upon the brain. Disturbance of audition, such as the auditory hallucination, might be the result of central disorder of the *tractus*

solitarius eighth nerve nucleus, just as deafness, tinnitus and vertigo were concerned peripherally with the eighth nerve and cochlea together with the seventh, ninth and tenth nerves in the neurophysiology of the cranial parasympathetic ganglia.

Dr. Halloran, in conclusion, raised the question of why auditory hallucinations of proven otitic origin were so rare, while peripheral lesions with their abnormal impact on the *nucleus solitarius* were so common.

Discussion.

W. SCOTT CHARLTON (New South Wales), in opening the discussion, referred to the importance of cortical lesions as a cause of auditory hallucinations. While realizing the importance of Penfield's work on electric stimulation of the cerebral cortex in the conscious subject, Dr. Scott Charlton agreed with Walshe in sounding a note of caution—namely, that such stimulation was abnormal, and therefore the response to such stimulation might also be abnormal.

IAN MARTIN (Victoria) said that there were a number of points which needed clarification. In the definition of hallucination, it seemed that there must be included the notion of subjective experience in the absence of objective stimulus. That would immediately exclude all those conditions described in which there was normal sensory stimulus, or stimulus arising as a result of a pathological lesion. The distinction between hallucination on the one hand, and dream, creative imaginings and phantasies in the waking or hypnotic state on the other must surely be based upon the notion of reality testing, at the time or subsequently. Thus hallucination was one example of the failure of the function of testing reality. Dr. Martin went on to say that the judgement as to whether a person was suffering hallucination or not had little, if anything, to do with the content of the experience. It mattered little whether the content was simple—a whistling or singing closely resembling tinnitus—or whether it was elaborate and complex. Hallucinations were not always vivid, but might be vague, distant and fleeting. Vivid, highly elaborated hallucinations were common in the advanced schizophrenic, but refinement of judgement for early diagnosis required the recognition of less gross and obvious hallucination, less gross failure of reality testing. It was to be noted that in organic psychosis visual hallucination predominated, whereas in functional psychoses, such as schizophrenia, auditory hallucination predominated. From what Dr. Schmalzbach had said, Dr. Martin did not understand clearly whether Dr. Schmalzbach believed that hallucination could and should be understood in physiological terms. He wondered whether Dr. Schmalzbach meant that the hallucination could be understood only in psychological terms even when it was associated with an organic lesion. In that regard, the still modern writings of Hughlings Jackson remained cogent. His concept of "speech apparatus" reminded them that the apparatus had a physiological substrate and a psychic function. Freud's "psychic apparatus" was a concept modelled on Hughlings Jackson's. It was necessary, therefore, to be careful to distinguish lesions in the physiological substrate that affected the psychic function, from disorders of the psychic function in the absence of organic dysfunction. That distinction could be made on clinical grounds, usually but not always. Those considerations applied to the auditory apparatus as part of the total psychic apparatus.

SECTION OF NEUROLOGY AND PSYCHIATRY AND SECTION OF PÆDIATRICS.

Stress in Childhood.

A COMBINED MEETING of the Section of Neurology and Psychiatry and the Section of Pædiatrics was held to discuss "Stress in Childhood".

D. R. McCALMAN (United Kingdom) read a paper entitled "Stress in Childhood". He said that Selye's theory of stress adaptation attempted to explain all disease in terms

of the organism's efforts to adjust itself to situations of stress, and that his paper was an attempt to correlate the finding of experimental psychology with the characteristics of stress disorders. There were similarities between the symptoms of stress behaviour and learning processes and those symptoms which appeared when a shift in dominance took place between cortical and subcortical dominance. Thus there was a notable parallel between the characteristics of behaviour under stress and those of infants who had suffered maternal deprivation in the first years of life.

F. W. CLEMENTS (New South Wales) reported a study undertaken to test the hypothesis that the emotional environment of the home, including the quality of the mother-child relationship, had a marked influence on the physical and mental health of pre-school children. He said that 78 children attending a kindergarten had been studied for periods ranging from six months to two years. Four areas were investigated in each child: the physical growth, the presence of psychosomatic symptoms, the posture, and the emotional development and stability, including certain speech defects. The children were classified according to the number of areas in which they were judged to be unsatisfactory by certain specified criteria. On that basis the following distribution of the children was made: no areas involved, 21; one area involved, 15; two areas involved, 22; three areas involved, six; four areas involved, 10; speech defects and other areas involved, four.

Dr. Clements said that the order in which the signs and symptoms appeared was interesting. The majority of the children showed abnormal features first in the emotional area; that was followed by the appearance of signs in the psychosomatic area; disturbances of physical growth and posture came later.

The physical and emotional environment of the home, including the quality of the mother-child relationship, was assessed from the combined observations and knowledge of the director of the kindergarten and Dr. Clements. The director made several visits to each home, and Dr. Clements conducted a number of interviews with each mother, and occasionally with a father. On the basis of the information gained the mothers were classified into one of five categories, ranging from balanced secure mothers to women grossly disturbed through financial circumstances, marked marital disharmony or desertion, to a group in which the mother was dead or had deserted.

The rating of each child according to the number of areas in which abnormal signs and symptoms were recorded was correlated with the classification of the mother. That showed that the majority of mothers of children who were either free of signs in the four areas studied, or had signs in one area only, were placed in category one or two; that suggested that such children came from stable homes or from homes in which any disturbance was of a temporary character. In the terms of the present symposium those children were subjected to a minimal number of stressful situations. In contrast, all the mothers of the children with signs and symptoms in three and four areas were placed in category three, four or five. Those mothers were poorly integrated, or were greatly disturbed emotionally for a relatively long period, or had died or deserted their children. In terms of the symposium those children might be regarded as living in homes where they experienced a large number of stressful situations.

R. T. BINNS (South Australia) referred to the description given by Professor MacCalman of the theories of stress reactions in children and to Dr. Clements's description of some of those reactions which he had observed in his investigations of pre-school children at the Lady Gowrie Kindergarten. Dr. Binns said that Dr. Clements had demonstrated that there was a correlation between the mother's emotional state and the severity of the reaction to stress. The more stressful the home environment, the greater were the emotional disturbances in the children. Those disturbances led to behaviour disorders, psychosomatic changes, postural defects and a lowering of general health. Dr. Binns drew attention to Dr. Clements's efforts

in the management of the emotional disorders which he found. In his capacity as school medical officer and in association with the director and staff of the kindergarten, the mother's and child's problems were dealt with, and that tended to prevent further mental and physical deterioration.

Dr. Binns further said that the function of schools went beyond the teaching of pupils. The promotion of their mental and physical health was a matter of first importance. Learning was inhibited by emotional disturbance, which might follow deprivation of affection. Some of Dr. Clements's patients were advised to attend a child guidance clinic, where more extensive studies of the environment would be made by the psychiatric social worker, further psychological assessment of the child's ability and personality attributes would be made by the psychologist, and more intensive psychotherapy would be conducted by the psychiatrist with the aid of his clinic team. Much of the stress that children encountered at school might be alleviated when necessary by the cooperation of the school staff. The stresses in the domestic situation might at times be alleviated by a sympathetic approach on the part of the family doctor as well as by the social worker or by other cultural agencies. The child's resistance to inevitable stress could be built up by the care and affection of the parents or guardians, who willingly accepted the child in the family circle as he was and gave him encouragement and support. Dr. Binns finally asked Dr. Clements whether he had observed that emotionally disturbed children were more susceptible to infection and more prone to accidents than children not so disturbed.

J. BOSTOCK (Queensland) drew attention to the need for longitudinal research in the problems of psychiatry. He said that memory was proverbially fitful and unreliable. A great many of the difficulties in medicine were due to the impossibility of correlating the facts of life in childhood with those of adulthood when seen through a murky vista of crowded years. The only remedy was "on the spot" observation and recording throughout a lifetime. Professor Bostock said that it was a difficult task, but one that they were attempting in his department. They asked themselves where the children were heading. They endeavoured to see the beginnings of their personality deviations. The Commonwealth Government deserved credit for its research grant to universities, which had made that particular research possible. There was need for much more research of the same nature. There were great opportunities in child guidance clinics. The Lady Gowrie centres were available for nation-wide research at the pre-school level. They could deal with the problem already referred to, that of the New Australian and his psychological difficulties. Professor Bostock said that an expression by the Congress on the importance of research into the stresses of childhood was a helpful means of drawing public attention to an urgent need.

ROBERT SOUTHBY (Victoria) referred to the psychosomatic group of illnesses, and asked whether the whole group could not be associated with or even caused by an allergy.

Professor MacCalman, in reply, admitted that he had, as one of the speakers had said, mounted a horse and galloped off in all directions. He referred to a recent film made in France, in which a child, aged three or four years, suffering from a depressive state, was shown and the treatment was followed through. Professor MacCalman emphasized the extreme concentration necessary on one case if the child was ever to become normal, and the tremendous amount of time and trouble the cure involved. The moral was that it was relatively simple to prevent or alleviate trouble in the early stages, but ruinously expensive to treat such children. Obviously it became the duty of practitioners to discover and prevent early psychological trauma.

Dr. Clements, in reply, agreed that affected children were more susceptible to infection than others, but he did not think that they were more susceptible to accident. He planned to follow up the children for as long as possible. He said that it had been disappointing to find some of them progressively deteriorate at kindergarten when their mothers were in his categories four and five. Many mothers

did not seek treatment for their children. Dr. Clements agreed with Dr. Southby that there might be allergy in the background; but therapy on the basis of disturbed emotional situation had led to improvement, and also it was often possible to obtain a history of a specific emotional crisis.

SECTION OF NEUROLOGY AND PSYCHIATRY AND SECTION OF REHABILITATION AND PHYSICAL MEDICINE.

Psychiatric Aspects of Rehabilitation.

A COMBINED MEETING of the Section of Neurology and Psychiatry and the Section of Rehabilitation and Physical Medicine was held to discuss psychiatric aspects of rehabilitation.

ALAN STOLLER (Victoria) said that medicine was becoming oriented towards the developing social sciences and the problems of the chronic sick, the aged and the mentally afflicted. The loss of productivity from that group was a great economic burden to the community. With the chronic sick, psychological factors were important, and those, as well as the social background of the disabled person, needed to be taken into account in any programme of rehabilitation. The chronically sick and the mentally afflicted needed an active environment, and attention had to be paid to social factors and personal interrelationships, with the consequent production of a setting which would encourage suitable motivation towards creativity rather than withdrawal.

Dr. Stoller went on to say that the principles of the "therapeutic community" involved good leadership, free communication between patients and staff, a highly-motivated social setting and a retraining programme realistically geared to conditions outside. For rehabilitation of psychiatric patients, special features needed to be considered for mental hospitals, boarding-out programmes, neuroses centres, social therapeutic and day centres, sheltered workshops and home-bound employment, as well as for industry. The integration of rehabilitation with community psychiatric services in general required special consideration.

In conclusion, Dr. Stoller expressed the view that Australia was not facing its responsibilities in the field of rehabilitation of psychiatric patients and was well behind the United Kingdom and the United States of America. A forward move must be expected before long.

R. F. MAY (Victoria) said that close liaison between physical medicine and psychological medicine was achieved in the rehabilitation centres. The great loss of man-hours in industry and illness had been shown in the war, and similarly did occur in civil life, particularly in relation to rheumatic disease. Successful physical therapy depended on an accurate diagnosis and an explanation of the method of production of somatic pain. Such terms as fibrositis, neuralgia, lumbago and sciatica were mere names and labels like the familiar term "headache". They embraced a wide group of conditions, each with its own anatomical and pathological basis. It was known that some sciaticas were of mechanical origin, but one must be careful that such new and happy terms as intervertebral disk and psychosomatic pain were not used in a slipshod fashion. Henry Cohen had spoken of the "danger of surrendering judgement to the fascination of a name". Both orthodox and unorthodox practitioners might regard pain in the knee as due to a slipped cartilage and spinal pain as due to a slipped disk.

The term "fibrositis" needed much clarification. It had been said that no such condition existed because there was no pathological evidence of its presence. On the other hand, if one's outlook was too limited, every pain in the back was due to the intervertebral disk. It was necessary to consider the complexities of structures in the lumbar region (muscles, fasciae, ligaments, intervertebral joints,

disks, apophyseal joints, sacro-iliac joints, developmental abnormalities, vertebrae and appendages) which could be involved in trauma, with strains, sprains, subluxation and fractures, and arthritis might occur in any of the many joints. In consequence, limitation of the normal mobility of any of these movable structures might give rise to stretch pain and stretch reflex. "Fibrositis" did occur in soft tissue as a result of chill and exposure, and as a result of stretching and tearing with vigorous or unusual exercises; and there was the type due to irritation by toxins from septic foci or metabolites of gout. There were psychogenic causes of muscle pain, rheumatic fibrositis, and painful states with muscle spasm due to intervertebral disk protrusion and those associated with faulty posture. Barlow had indicated the importance of posture in psychosomatic diseases and some cases of psychoneurosis. Postural defects were very common. In painful conditions the factors of focal sepsis, metabolic disturbance, mechanics, posture, trauma, heredity, environment and psychology, all had to be given due consideration.

The usual results of unrelieved backache were inability to work, broken morale and loss of sleep, anxiety when the diagnosis was uncertain and anxiety with misdiagnosis—the diagnosis of arthritis of the spine spelt disaster in the minds of most people.

Many cases of neuritis, neuralgia and sciatica had a mechanical origin, but they were not always due to the intervertebral disk. Sir Russell Brain, in his Heberden Oration in 1953, illustrated the complexity of the structures and the mechanism for production of pain. When pain was of spinal origin, manipulation was most satisfactory. Failure to produce relief occurred in association with pending litigation, fear of loss of compensation and various hysterical problems. Industry failed in the rehabilitation often because no light work was available and the patient had to continue with compensation, boredom and idleness. Prolonged physical treatment was likely to reinforce and stabilize the illness, but if it was not carried out the patient felt neglected. Also, organic disease resembled psychogenic disease in the early stages and might be missed.

Rheumatoid arthritis, a chronic disabling disease, was a constant source of anxiety to patient and relatives. Many early cases started as a chronic infection, frequently dental; but hereditary, endocrine, environmental and psychological factors all had importance.

Dr. May said that psychogenic rheumatism was uncommon in his experience. He investigated all toxic and mechanical causes before falling back on the diagnosis of psychogenic pain. Functional overlay was only too common, especially when compensation and pension were considerations.

Physical therapy had become fashionable, but should seldom be given for so-called psychological effect. Long-term courses of treatment should not be given without critical review of physical diagnosis, methods of treatment, psychological investigation and total assessment of the patient with a trial of planned rehabilitation.

True malingering was not commonly met with in departments of physical medicine, though it had been common during the war period. Symptoms of physical pain were often exaggerated. Usually the anxiety complex manifested itself more with visceral and psychological symptoms. The reactions of patients were often over-compensated and really defence mechanisms. No matter how thorough assessment and rehabilitation were, some psychological and physical incurables and unemployables were still left.

G. G. BURNISTON (Victoria), in opening the discussion, said that he believed that it was Plato who said: "There are physicians for the body and physicians for the soul, yet the two are one and indivisible." In many respects the psychological factors of chronic illness created the rehabilitation problem; they were also closely associated with the social factors. When the Department of Social Services Rehabilitation Service was inaugurated in 1948, a review of 75,000 existing invalid pensioners was made. It was found that 70% of them were beyond the help of the

Rehabilitation Service. That was due mainly to their poor motivation, their unwillingness to cooperate in rehabilitation, and various unsatisfactory social factors in their environment. At that stage the Rehabilitation Service was not geared to deal adequately with those factors.

Dr. Burniston said that he strongly agreed with Dr. Stoller that rehabilitation was simply a new concept of treatment, in which the psychological and social factors must be treated concomitantly with the physical factors. The modern hospitals in Australia were unwittingly conspiring to encourage the chronic ill-health which so many patients enjoyed. Dr. Burniston agreed, too, that patients were frequently kept for long, demoralizing periods under expensive medical treatment, when they could be treated much more cheaply and—what was more important—more progressively in the healthier environment of a medical rehabilitation unit. That fact had been recognized by Watson-Jones when he organized his orthopaedic service for the wartime Royal Air Force. All patients treated in the orthopaedic wards of the air force hospitals were transferred from hospital to a rehabilitation centre as soon as possible. At those centres the patients were inspired by a new spirit of enthusiasm. Removed from the influence of over-indulgent relatives, they were encouraged to take part in group activities in an atmosphere more closely resembling a normal community. Dr. Burniston said that although he had stressed elsewhere the need to coordinate hospital facilities for rehabilitation, he could not stress too strongly, in endorsing Dr. Stoller's remarks, that medical rehabilitation units should be established in every scheme of rehabilitation for all types of cases, both physical and mental. Dr. Stoller had referred to the "therapeutic atmosphere of patients and staff". That was a very real factor to be considered in the rehabilitation of the severely disabled.

Dr. Burniston went on to say that his own work in rehabilitation had been mainly concerned with physical disability, but nevertheless there had been few cases in which he had not been confronted with an associated psycho-social problem; he proposed to refer to the programme of the Rehabilitation Centres to meet that problem. Firstly, they encouraged the patient to participate actively in group activities. They encouraged them collectively to set up their own community activities—for example, social clubs, newspapers *et cetera*. Guidance in those matters was given by the staff, but responsibility for their success rested with the patients. Secondly, they tried to build up confidence and skill by having patients participate progressively in increasingly difficult occupational therapy projects. Last, they made full use of psychological testing whilst the patient was at a centre, and they enlisted the help of the social workers for social treatment.

Dr. Burniston then said that the Commonwealth Rehabilitation Service could not be said strictly not to cater for the psychiatric patient. It admitted many patients with psychosomatic problems, many with different forms of neurosis, and some border-line psychotics. It was a fact also that they had taken into the centres patients who had been discharged from the mental hospitals, but who still needed further rehabilitation. With many of those patients they did not consider that they had been successful. They appreciated that there were some gaps in the service; for example, more attending or resident psychologists and social workers and more visiting psychiatrists were needed. At present they were attempting to appoint psychiatrists as consultants to the service. Some States had done that. However, Dr. Burniston believed that a lot more could be done. He thought that the greatest factors militating against success were those to which Dr. Stoller had himself referred. One was the lack of organizations for proper rehabilitation in mental hospitals themselves, and another was the lack of appreciation by the community as a whole, but especially by industry *et cetera*, of what could be done for the mentally disabled. It seemed to him that there were many loose ends to be tied up in the rehabilitation of the psychiatric patient, and he was sure that the Commonwealth Rehabilitation

Service would be prepared, whenever possible, to play its part in solving that problem.

B. P. McCLOSKEY (Victoria) asked Dr. Stoller two questions. (i) What was the psychiatric approach to emotionally immature patients with physical handicaps? (ii) What was the best early approach to patients who had lost their right hand?

L. MALE (South Australia) asked Dr. Stoller about the rehabilitation of the leucotomized subject.

J. BOSTOCK (Queensland) stressed the need for careful liaison with industry. He quoted a case in which adverse publicity had been given on the difficulties experienced by a trainee in finding employment. The inference was that employers were not cooperative. On the contrary, several had made attempts to help and were sympathetic. That type of propaganda on behalf of the rehabilitation ideal was harmful to the cause. The approach to the public and to business was important, but it must be carefully planned.

IAN MARTIN (Victoria) referred to the emphasis placed by Dr. May on early and accurate diagnosis as the starting point of rehabilitation, which he said had prompted a number of thoughts. Dr. Martin had been impressed by the charm with which an expert in physical medicine had exploded many myths that currently resulted in excesses of physical investigation and therapy. It became apparent that much sound common-sense psychiatry could be practised under the banner of physical therapy. Dr. Martin asked Dr. May to comment on two groups of patients, two psychological categories commonly recognized in psychiatric practice. The first comprised angry, hostile and tense persons who could not express their feelings openly and freely, but showed them only covertly. The second comprised persons who had a high expectation from life and easily became resentful at the inevitable disappointments, yet could not express those feelings openly. Amongst the covert signs of the suppressed emotions were somatic concomitants in certain mimetic musculature. One had only to imagine the picture of a cat and a dog in hostile encounter to visualize the scalp, neck, back and limb musculature involved. One had but to palpate the areas to which paresthesia and aches were referred to confirm that the underlying muscles were tense and tender. Such people might have a "pain in the neck" in the psychic and somatic sense of the phrase. In psychiatric practice one encountered many patients with such muscle-tension pains. Some had "arthritic" changes demonstrated on X-ray examination, others had not. Many with such X-ray pictures had no such pain. There seemed to be little correlation between the two groups of evidence. Dr. May had mentioned the use of "Butazolidin" as a useful therapeutic test for rheumatoid arthritis. Dr. Martin said that a useful test for muscle-tension pain as a result of such suppressed emotions was the intravenous injection of "Sodium Amytal" or a similar drug as a part of suitable psychotherapy. The emotional and the muscle tension and discomfort subsided *pari passu*. No doubt Dr. May was familiar with those considerations.

W. GORDON RICH (New Zealand) said that in private practice he found, like Dr. May, that there was usually a physical factor for pain and disability. In that respect he instanced the "chronic appendix" as a cause of pain in the back. By means of X rays the "subacute appendix" could be accurately assessed in a high percentage of cases. Referring to cases in which X-ray changes were seen in the intervertebral bodies, Dr. Rich mentioned the work of Dr. Charles Bigg, of New Zealand, who had shown that those changes were the result of degeneration of the intervertebral disks. When pain was present in those cases, relief could usually be obtained by the use of ultra-sonic therapy. Cases of headache and pain in the neck formed a syndrome associated with sinusitis and degeneration of intervertebral disks; those patients could be relieved by ultra-sonic therapy and manipulation applied to the neck, and ultra-short-wave therapy.

Dr. Stoller, in reply to Dr. McCloskey, said that it was a good thing for the attending doctor to understand and deal with emotional factors himself. If he felt that was

beyond him, he should call in the psychiatrist. In reply to Dr. McCloskey's second question, Dr. Stoller said that the best early approach to patients with right hand loss was reassurance and retraining.

In reply to Dr. Male, Dr. Stoller said that early retraining and social and group activities and interests were important. The type of operation used influenced the amount of rehabilitation required. Minimal cuts, and especially the bimedial operation, made the task of rehabilitation easier.

In reply to Dr. Martin, Dr. May agreed that the patients tended to fall into certain groups—for example, those in which compensation was a factor.

SECTION OF OBSTETRICS AND GYNÆCOLOGY, SECTION OF OPHTHALMOLOGY AND SECTION OF PÆDIATRICS.

Care of Mother and Baby After Birth.

A COMBINED MEETING of the Section of Obstetrics and Gynæcology, the Section of Ophthalmology and the Section of Pædiatrics was held to discuss the routine care of the mother in the puerperium and of the newborn baby.

Routine Care of the Mother in the Puerperium and of the Newborn.

D. R. SHEUMACK (New South Wales) said that the puerperium in its widest sense might be defined as the period taken by a woman recovering from the discomfort, fatigue, pain and anxieties of labour, during which time she was kept under nursing and medical care. He stressed the variability in time for the processes of involution, lactation and endocrine balance to become completed or established. He said that rest, but not complete bed rest, was of primary importance, but recommended early ambulation, outlining its advantages both psychological and otherwise. He said that post-natal exercises were desirable, and, in conjunction with early ambulation, had been responsible for the almost dramatic disappearance of thrombosis and pulmonary embolism. Patients in the puerperium should be allowed a normal diet from the outset. Anæmia was common, and if the routine hæmoglobin estimation on the seventh day was below 12 grammes *per centum*, iron therapy was indicated.

Dr. Sheumack described the care of the bowels, bladder and breasts, and outlined the post-natal examination at some length. He said that vaginal examination on the patient's discharge from hospital on or about the tenth day was unwarranted, but when the patient reported after six weeks, a full pelvic examination was carried out. The significance of common abnormalities such as cervicitis, vaginal discharge, backache, pelvic floor relaxation and retroversion was mentioned. Use of the pessary in the management of puerperal retroversion was not recommended. Finally, Dr. Sheumack referred to the time of return of normal menstrual function and ovulation. He said that age and parity had little influence, and approximately 70% of patients would commence to menstruate prior to the termination of lactation.

Turning to the care of the newborn, Dr. Sheumack said that he would discuss only certain aspects. He would not mention feeding problems as he considered that those lay within the province of the pædiatrician. He stressed the importance of careful examination of the newborn infant for congenital malformations such as imperforate anus, cleft palate and cardiac defects. He discussed the routine care of the eyes, mouth, nose, umbilical cord, napkin area and skin, and pointed out that, although minor degrees of conjunctivitis were common, routine instillation of antiseptic drops into the conjunctival sac immediately after delivery was not recommended. The association of blockage of the nasal passages, mouth breathing and feeding difficulties was mentioned. Dr. Sheumack said that umbilical

sepsis, which had once been one of the major causes of neonatal mortality, was uncommon, particularly in its more severe forms. Binders were undesirable, because they inevitably became loose, and might actively hinder normal respiration. Finally, the prevalence of napkin rash in bottle-fed infants was mentioned.

Management of the Newborn Baby.

CLAIR ISBISTER (New South Wales), in a paper on the management of the newborn baby, said that periodically it was necessary to review all routine procedures; the main purpose of her paper was to ask that all should look seriously at the routine care of the newborn baby in maternity hospitals and ask themselves if it was in the best interests of the child and his mother and whether there was anything they should do about it.

The high perinatal death rate figure ranging from 15 to 45 per thousand (stillbirths plus neonatal deaths) was a challenge that must be met. Hospital obstetrics had replaced domiciliary obstetrics, and that had saved many mothers and babies, but the hazards of hospital obstetrics were not always realized. The baby had to change over from a parasitic to an individual existence, and it took him days or even weeks to adapt himself to his new environment. His mother, overwhelmed by new emotions and often knowing nothing of babies, had a lot to learn; it therefore seemed extraordinary that a system should have been evolved in which mother and baby were separated and the baby had to endure quite strenuous non-essential procedures.

Two particular hazards of hospital obstetrics emerged: (i) the danger of failing to get the food Nature intended for the baby, and with it often the first breakdown in mother-child relationships; (ii) the danger of hospital infections, with the occurrence of severe staphylococcal infections caused by epidemic strains.

If the hospital period was to be spent to the best advantage, it should fulfil the following needs: (i) The baby should be given the best conditions for adapting himself to his new environment physically and psychologically; they included a good prenatal care and preparation for childbirth programme, attention to the establishment of respiration, maintenance of body temperature and minimal handling by the staff (no baths, early suckling and protection of babies who have had exciting or early deliveries). (ii) Every effort should be made to establish breast feeding by (a) physical and psychological preparation of the mother for lactation on the lines suggested by Waller, (b) supervision of the first week of lactation to keep feeds short, prevent cracked nipples and overloading of the breast, and teach the mother the management of lactation, and (c) production of an atmosphere conducive to the most efficient functioning of secretory and draught reflexes—for example, "rooming-in". (iii) The mother and baby should be protected from hospital infections by (a) general measures to reduce cross infection, (b) removal of carriers of epidemic strains, and (c) increased protection for babies of lowered resistance. Circumcisions should not be performed in maternity hospitals because of the proximity to unhealed umbilical cord and the high incidence of hæmolytic *Staphylococcus aureus* on the cords. (iv) Education of the mother while under expert supervision both in care of the baby and in care of herself.

The Care of the Eyes of the Newborn.

R. HERTZBERG (New South Wales) said that the care of the eyes of the newborn commenced before the baby opened his eyes, in order to prevent *ophthalmia neonatorum*, which was defined as any inflammation of the eyes occurring in the first fourteen days of the baby's life. In 1880, Credé had introduced his method of silver nitrate prophylaxis, a procedure which had done more than any other to reduce the incidence of blindness in childhood. Silver nitrate had disadvantages; it might cause a conjunctival reaction, conjunctival hæmorrhage or corneal opacities, and it might not always prevent ophthalmia. It was said that if a fresh solution was used, those reactions would be minimized, as the reactions were probably due to free nitric acid. A fresh

solution of silver nitrate should be used and the eyes must be irrigated after its use.

When penicillin had become freely available, it had been used in many clinics as a prophylactic instead of silver nitrate. A solution was used containing 5000 units per millilitre; three drops were instilled into each conjunctival sac, after first swabbing the lids before the eyes were opened. Even with penicillin there had been some reactions. Today, however, penicillin could not be relied upon as a prophylactic or therapeutic agent owing to the incidence of penicillin resistance. The resistance of organisms to antibiotics had created a state of affairs in which a gonococcal infection might be more amenable to therapy than some staphylococcal infections. "Aureomycin" in 0.5% solution had also been used, and the results of its use were gratifying.

Dr. Hertzberg went on to say that comparison of a series in which swabbing of the lids with saline was carried out with a series in which silver nitrate was also used revealed that in neither group did a severe infection occur, and all babies left hospital with clear eyes. It was recommended that when there had been adequate ante-natal care, and when confinements were carried out in a modern hospital, prophylaxis should consist of swabbing of the lids at birth, before the baby opened his eyes. When there had been no ante-natal care, and when conditions were primitive, then the use of silver nitrate was desirable. When a sticky eye developed, the treatment should be smear examination and culture, followed by frequent irrigation with saline. If there was no response in four days, then the antibiotic to which the offending organism was sensitive should be instilled. If facilities for culture were not available, streptomycin should be instilled.

Dr. Hertzberg said that inclusion blenorrhœa was a form of conjunctivitis which occurred about one week after birth. It was due to a virus, the normal habitat of which was the cervical epithelium; and so infection occurred during passage down the birth canal. The infection responded to sulphonamides.

Dacryocystitis was a condition frequently seen, and might be unilateral or bilateral. Treatment was by massage and antibiotics; probing of the tear passages would be necessary if the condition persisted.

In conclusion, Dr. Hertzberg said that examination of the eyes should be made for any obvious congenital defect before the child left hospital.

Discussion.

G. SIMPSON (Victoria) stressed the importance of maintaining close relations between pædiatricians and obstetricians.

T. M. A. JEFFCOATE (United Kingdom) said that he agreed with what had been said. In most of the hospital beds under his control they had followed the practice of keeping the baby with the mother and allowing "demand feeding". He agreed that it threw more responsibility on to the nursing staff. He was not quite convinced that the practice gave the mother all the confidence that had been claimed for it. In the past it used to be said that a mother lost her first child and reared the rest. Today one could say mothers "had" their first baby and enjoyed the others. Professor Jeffcoate did not agree with Dr. Isbister that one could have so much faith in Nature. Natural death rates would be very high without interference. Sticky eyes were a real problem. His babies had no prophylactic drops, yet 30% had sticky eyes. He blamed irritation from vernix, perhaps introduced by careless swabbing. Some pædiatricians of his acquaintance were becoming so helpful to obstetricians that they now wanted to be present during labour and even in the ante-natal clinics to look after the baby's interests.

G. F. SALTER (Victoria) asked whether the small umbilical hernias frequently seen should receive any treatment in the neo-natal period.

N. M. NEWMAN (Tasmania) said that in his experience "sticky eyes" in a premature baby had once led to death from septicæmia.

H. M. CAREY (New Zealand) questioned whether it was necessary to swab the mother's perineum twice daily in the puerperium when showering would be better. He asked Dr. Isbister how she controlled carriers of *Staphylococcus aureus*. They had found 25% of carriers in New Zealand hospitals with a high proportion of antibiotic resistance.

F. ARDEN (Queensland) said that he was relieved to find that a person of Dr. Isbister's force of character still had trouble with senior nursing staff when it came to introducing reforms that cut across routine. They had recently abolished the umbilical dressing and binder at the Brisbane Women's Hospital with gratifying results—more dry cords and fewer infections.

M. T. COCKBURN (South Australia) added that in his hospital they altogether stopped bathing their babies in the nursery and since then had almost lost their skin problems as well as relieving their overworked nurses. He asked Dr. Hertzberg how he administered streptomycin and also how long it was since he had seen gonococcal ophthalmia in the newborn.

KATE CAMPBELL (Victoria) asked about the efficacy of mercurochrome for prophylactic eye treatment.

Dr. Sheumack, in reply, said that perineal swabbing would probably soon cease owing to nursing shortage. He personally advised his patients to take a shower on the third day, and they did well.

Dr. Isbister, in reply, said that she was encouraged to learn that paediatricians had been able to exert such an influence in maternity hospitals in Melbourne and wanted to know what they did with the matron. Senior nursing staff formed the chief opponents of Nature nurseries, their attitude seeming to be that "things would be so nice if only the mothers were not here". It was vitally important that mothers be given a chance to learn their baby's language while still in hospital—in other words, to learn how to interpret his cries. Dr. Isbister thought that umbilical hernias sometimes followed infections, and advised strapping at once in premature babies and after eight weeks in others. Surgery was hardly ever indicated under eighteen months. She considered that her advocacy of pre-natal preparation and rooming the baby with the mother was really a return to Nature. The important thing was not to go contrary to Nature on normal occasions. She used lanoline on the baby's flexures only in winter and found it good, as it encouraged the nurses to inspect them frequently. She stressed the importance of educating nurses to report and control small infections. She could not agree that vernix was an irritant. In France it was collected, potted and sold. Regarding baths for babies, one study showed that a bath on the fourth day with a new detergent soap was cutting down skin infections. The only certain way of controlling staphylococcal infections was by phage-typing, which was not possible everywhere. "Neotracin" ointment in the noses of carriers had helped. Nurses with recurrent boils were a real menace and needed full treatment. Elimination of nasal carriers was not the final answer.

Dr. Hertzberg, in reply, said that he would rather have vernix in his eyes than silver nitrate. He did not think that sticky eyes predisposed to recurrent infection unless there had been inadequate treatment. When using streptomycin he administered drops containing 10,000 units per cubic centimetre every two to three hours. In reply to Dr. Cockburn, he admitted that he had not seen one case of gonococcal ophthalmia neonatorum in the past ten years.

SECTION OF ORTHOPÆDICS AND SECTION OF PUBLIC HEALTH AND INDUSTRIAL MEDICINE.

Low Back Pain.

A COMBINED MEETING of the Section of Orthopædics and the Section of Public Health and Industrial Medicine was held to discuss "Low Back Pain".

R. D. MCKELLAR HALL (Western Australia) presented a paper on backache, in which he made a plea for a more

rational outlook on the ætiology and treatment of the condition. He directed attention to the main features of the anatomy of the intervertebral joints, and stressed the point that they differed in no basic principles from the anatomical features of other joints in the body; hence there was no reason why they should not be subject to similar traumatological stresses and strains. The presence of the intervertebral disk was a complicating factor, but it was only a part of the mechanism and not the whole and, in Dr. McKellar Hall's opinion, only a minor part at that.

Attention was directed to the various strains of muscles and ligaments that might occur with trauma and to the various pathological changes which might occur in the interpedicular joints as a result of trauma, alterations of position following disk degeneration with resulting narrowing of the intervertebral spaces and so on. The rare occurrence of herniation of an intervertebral disk was not overlooked.

Dr. McKellar Hall said that treatment was based on an attempt at a more accurate diagnosis than the popular and almost exclusive one at the present time of "disk lesion". As most backaches were of traumatic origin and consisted of sprains or joint displacements which in cases of neglect or bad treatment were often followed by adhesions, the treatment mainly consisted in mobilizing the painful areas. Manipulations, physiotherapy and manipulation under "Pentothal" anaesthesia had superseded the current methods of rest in bed, liniments, traction and corsets, plaster of Paris *et cetera*. The results were encouraging.

Dr. McKellar Hall concluded with a plea for the teaching of manipulative technique in the schools of physiotherapy and also in the medical schools.

W. HUGH SMITH (New South Wales) said that twenty-five years earlier backache had been no less common than it was at present. In many cases a diagnosis of muscle or ligamentous strain was made, and the condition responded quickly to rest in bed or the application of heat. When the pain persisted, a more complete examination frequently demonstrated a causative factor, such as arthritis, faulty posture or disease or neoplasm of the spine or adjacent viscera. A diagnosis might be made of lumbago, or if the pain radiated to the leg, of sciatica. Neither patient nor physician was unduly worried, because both knew that in the majority of cases the symptoms usually disappeared in a short time. However, often the pathology was unknown.

Dr. Hugh Smith went on to say that, following on the post-mortem studies of Schmorl, the work of Mixter and Barr in 1934 had stimulated interest in backache and sciatica. Removal of fragments of prolapsed disks effected a cure in many acute and chronic cases. Unfortunately, a diagnosis of "disk lesion" became almost universal to explain any pain in the low part of the back or radiating to the leg. The diagnosis was still made too frequently, usually without adequate examination, and in the absence of the clinical criteria carefully enumerated by Mixter and Barr.

Though operative procedures were not now practised so frequently as they had been a few years earlier, many patients with mild backache were over-treated. The patient might be suffering from some minor back condition, but he was fortunate if he escaped manipulation, with or without anaesthesia, or incarceration in a plaster jacket or spine, or being condemned to the wearing of a cumbersome spinal brace. He might well recover from those physical ministrations, but the anxiety state which followed might not be so readily cured.

Dr. Hugh Smith said that it was time to realize again that back muscles and ligaments were subject to strains as were muscles and ligaments elsewhere, that spinal joints could be diseased and painful, and that congenital abnormalities or postural deformities might cause backache, to mention but a few conditions likely to cause that symptom. The protrusion of an intervertebral disk was but one cause of backache and sciatica, and the diagnosis should be made only after thorough investigation.

O. LEITCH (South Australia) said that the painful nodules characteristically present always occupied the same site. They were at the point of emergence of the superficial nerves through the deep fascia.

F. MAY (Victoria) supported the use of manipulation, but urged that it should always be performed by the doctor and not by a physiotherapist.

B. KEON-COHEN (Victoria) emphasized the fact that sciatica due to a lumbar disk protrusion radiated below the knee.

H. C. BARRY (New South Wales) said that he still believed that a disk lesion was easily the most common cause of low back pain and sciatica.

L. J. WOODLAND (New South Wales) supported Dr. Hugh Smith in the plea that the expression "disk lesion" should be disregarded by all, including general practitioners and radiologists. Dr. Woodland said that the morbidity caused by the injudicious mention of disk trouble to indolent patients was a common cause of real distress and prolonged invalidity. Sudden mental shock and worry could also cause backache. Dr. Woodland said that the junction between vertebrae should be regarded as a tripod comprising the disk and its accoutrements anteriorly and the two zygapophyseal joints posteriorly. It was impossible to have a serious derangement of any one of those three joints without affection of the other two. The anterior joint between the vertebral bodies was commonly affected by degenerative changes due to congenital, constitutional or occupational causes. If a vertebra was unstable, ligamentous strain of one or other of the component joints occurred easily and was the main cause of acute low back pain. When "sciatica" occurred, the cause was usually either an irritation or a compression of a nerve root. The former was often due to disk instability; the latter was almost always due to disk herniation. A diagnostic feature of an unstable vertebra or strained anterior joint was tenderness on pressure over the spinous process or interspinous ligament. That was most easily elicited by pressure when the sacrospinales of the patient were relaxed by his lying prone over pillows or a couch.

Dr. Hugh Smith, in reply, pleaded for the deletion of the term "disk lesion" from radiographic reports. He said that he would prefer a comment such as "narrowing of the disk space". Once the report read "consistent with a ruptured intervertebral disk", the patient was taken a long way towards invalidism.

SECTION OF ORTHOPÆDICS AND SECTION OF RADIOLOGY AND RADIOTHERAPY.

Ankylosing Spondylitis.

A COMBINED MEETING of the Section of Orthopædics and the Section of Radiology and Radiotherapy was held to discuss ankylosing spondylitis.

The Clinical and Orthopædic Aspects.

K. R. DAYMOND (New South Wales) said that ankylosing spondylitis was a disease which went under a variety of names and which affected mainly young men between twenty and thirty years of age, causing the spine to be fixed rigidly in flexion. Its aetiology was unknown, but it was related to rheumatoid arthritis. There was a familial tendency. Infection could initiate its onset, but gonorrhoea was not a specific precursor. People who indulged fanatically in various sporting activities, such as gymnasts, swimmers and tennis players, were more prone to the disease. There appeared to be a definite relationship between the patient who had a short leg and the incidence of the disease, and also between the disease and patients who spent excessive hours in various forms of road and rail transport.

Clinical types of the disease were three: (i) That in which the patients suffered acute back pain from the outset. In addition, in those patients the disease often

affected joints rarely affected by other diseases—for example, the sterno-clavicular joint, acromio-clavicular joint and *symphysis pubis*. (ii) That in which the patients suffered from low backache extending over years. In that group the onset might have been in a peripheral joint before the backache was complained of. This peripheral form of presentation occurred in about 10% of cases. (iii) That in which the patients developed the flexion deformity without any pain to mark its onset or presence.

Laboratory tests such as determination of blood sedimentation rate and urinary ketosteroid levels were considered of little help in diagnosis of the disease or in the progress of treatment.

Treatment consisted of a combination of various methods, and Dr. Daymond said that to obtain successful results it was essential that all methods be given at the one time. Results were considerably improved if the patients is hospitalized for six weeks during the initial treatment. The forms of treatment of importance were: (i) deep X-ray therapy to the whole spine, (ii) physiotherapy consisting of total suspension on a Guthrie Smith frame, spinal extension exercises and breathing exercises, and (iii) adequate rest including at least ten hours' sleep per twenty-four hours and a diet of high protein and high vitamin content. "Butazolidin" and cortisone were considered to have only a minor place in the treatment of the disease and then only in patients who had had their maximum amount of radiotherapy. Spinal braces should only very rarely be ordered and were best avoided. Surgical operations such as hip arthroplasty were occasionally necessary, and in the extreme case wedge osteotomy of the spine had to be performed, but such a case should never arise.

Radiotherapy.

B. W. WINDEYER (United Kingdom) read a paper entitled "Radiotherapy in Ankylosing Spondylitis". He said that of 277 patients at the Middlesex Hospital, 92% were male and 8% female. Only 2.2% were aged under twenty years, 37.0% were aged from twenty to twenty-nine years, 42.5% were aged from thirty to thirty-nine years, and 18.2% were aged over forty years. Those with active disease localized to the sacro-iliac and lumbar regions made up 17.3%, 65.4% had the whole of the spine affected, while 17.3% had the spine affected and in addition extensive calcification of the ligaments. One hundred of the 277 had peripheral joint involvements.

Professor Windeyer pointed out that while the advanced stages of the disease offered an easy diagnosis, in the early stages there might be great difficulty. Typically there were pain and stiffness in the lower part of the back, perhaps intermittent, associated with muscle spasm of the long lumbar muscles, and radiologically there were osteoporosis, erosion and absorption of the sacro-iliac joint margins. Unilateral involvement was rare.

Radiotherapy was important in treatment, but was only one factor. Medical treatment, orthopædic treatment and physiotherapy all had a place. Radiotherapy removed the need for prolonged immobilization, but some fixation at the beginning, to promote rest and reduce spasm, was often necessary. X-ray therapy was of value only in active phases of the disease, and should be extended to all active areas. Once pain and spasm were relieved, active movement was to be encouraged; with severe deformities passive movements with the aid of slings and pulleys were helpful, and massage could help to build up wasted muscles.

Professor Windeyer said that under that régime 54% to 69% of patients had become symptom-free. Sometimes a leucopenia developed, and leucemia had been reported in association with the disease or with its X-ray treatment. Sterilization of the ovaries was a risk. Special osteotomy was at times necessary.

Discussion.

L. J. PARR (New South Wales) said that early diagnosis was the key to successful treatment. He had noted elevation of the blood euglobulin and fibrinogen contents in the

acute disease. Those levels subsided with clinical improvement. Dr. Parr said that he had found the therapeutic use of X rays disappointing in cases in which the peripheral joints were affected. Professor Windeyer replied that that had not been his experience. Dr. Parr said that many painful calcaneal spurs in young men had proved to be the forerunner of ankylosing spondylitis.

L. J. WOODLAND (New South Wales) asked Professor Windeyer if he thought that the new bone formation, which occurred in many cases of ankylosing spondylitis when hip arthroplasty or pseudoarthrosis was performed to mobilize ankylosed hips, would be diminished by deep X-ray therapy. Dr. Woodland agreed that spinal osteotomy was an excellent operation for patients with gross spinal deformity. He quoted a case in which, after he had performed spinal plating, the patient resumed work as a tram-guard. In addition, the correction of the spinal curvature had enabled the patient to marry.

Professor Windeyer, in reply, said that hip arthroplasty was successful if it was not performed until two years or more after the pain had been controlled. He commended spinal osteotomy.

R. G. ROBINSON (New South Wales) commented on what Dr. Parr had said about the necessity to exclude ankylosing spondylitis when calcaneal spurs were discovered. Dr. Robinson suggested an aetiological association of importance. He said that Forrester in France had suggested that in ankylosing spondylitis an adequate and thorough investigation of the prostate would almost always reveal the signs of infection, even though they might be minimal. Dr. Robinson had always found pus cells, at least in the smear which he examined as a routine procedure, and had seen spur formation and ankylosing spondylitis develop after infection of the prostate. Denys Ford in England had carefully followed up patients suffering from non-specific urethritis, and had clearly described the syndromes which might evolve. One syndrome was ankylosing spondylitis, another was periostitis of the *os calcis* with spur formation as part of the general periostitis at the points of traction. All those conditions had been well demonstrated in the X-ray films shown.

C. RUBINSTEIN (New South Wales) reiterated the relationship of urethritis to the development of ankylosing spondylitis.

NAOMI WING (New South Wales) pleaded for team work in the treatment of ankylosing spondylitis.

S. G. NELSON (New South Wales) said that the familial aspects of ankylosing spondylitis were especially prominent in female patients. It was rare to see a case in a woman without a definite family history. Kellgren in Manchester considered that there were three types of "rheumatic spondylitis"—the Reiter's type, most frequently seen on the continent, the Marie-Strümpell type of spondylitis, and rheumatoid arthritis of the spine—each with special radiographic features. The Americans tended to use small doses of X-ray therapy and were not keen on radiotherapy. They used "Butazolindin" in preference. When "Butazolindin" was used, the dosage should be the smallest consistent with relief of the pain. Dr. Nelson asked Professor Windeyer to say whether he ever used a second course of X-ray therapy when, as was sometimes the case, there was a recurrence some years after an adequate dose (2000r to the various fields).

Professor Windeyer, in reply, said that he was very reluctant to give a further course, but on isolated occasions had done so.

W. GORDON RICH (New Zealand) reported relief of pain from ultrasonic therapy when deep X-ray therapy had been withheld in the treatment of young women of reproductive age.

Professor Windeyer, in reply, reiterated the value of physiotherapy as soon as the pain was controlled. He also said that great benefit could be obtained from spinal osteotomy despite its risks.

SECTION OF ORTHOPÆDICS AND SECTION OF SURGERY.

The Management of Severe Surgical Trauma.

A COMBINED MEETING of the Section of Orthopædics and the Section of Surgery was held to discuss the management of severe surgical trauma.

J. R. BARBOUR (South Australia), in introducing the subject, said that the emergency of severe surgical trauma could occur anywhere, and it was only in the cities that a doctor could transfer the responsibility to organized clinics; so that its management must be simple and be effective without elaborate control. The increasing use and speed of road traffic had greatly increased the number of cases, and they occurred over the furthest extent on the roads. There had been a change, in that multiple injuries were much more common.

Dr. Barbour went on to say that, on admission of the patient to hospital, a rapid but complete examination was essential. Shock presented in a variety of forms, but usually meant a decrease in circulating blood volume, which, if progressive, led to tissue anoxia and death. To combat that, after examination blood samples were taken for matching before any infusion was given; then morphine was administered intravenously, oxygen was given intranasally, and a rapid infusion of plasma or dextran was made under pressure so that a pint was administered every five to ten minutes until the blood pressure was above 100 millimetres of mercury, systolic, and 80 millimetres, diastolic. Two separate veins might be used at the same time, and that would seem to render intraarterial infusion unnecessary. The extent of the injuries which had reduced the blood pressure to the danger level of 80 millimetres of mercury, systolic, and 60 millimetres, diastolic, was a rough guide to the amount of fluid to be administered.

Records were best kept on a standard anæsthetic sheet; the blood pressure every quarter of an hour, the hæmoglobin value hourly, and the hourly excretion of urine from an indwelling catheter were marked on the chart. The hæmoglobin value should be kept between 80% and 100%, and the urinary excretion between one and two ounces per hour.

The time of operation depended on the operation to be performed. The operations were in two groups. The first were those essential to resuscitation and must proceed during that treatment. They were closure of an open wound of the chest, stabilization of a crushed chest with paradoxical movement, control of obvious gross hæmorrhage, straightening of any distorted limb which was avascular at its extremity, and possibly the exclusion of a hopelessly shattered limb from the body by tourniquet. The second group of operations were performed after resuscitation was satisfactory; that was when the colour was good, the extremities were warm, the veins were filled, and the blood pressure had remained around 100 millimetres of mercury, systolic, and 60 millimetres, diastolic, for half an hour after an episode of rapid infusion. Only the necessary treatment of the wounds, setting and splinting of limbs and laparotomy would be performed, and during the operation further infusion was usually required.

The final or definitive treatment of the injuries was best postponed for ten to fourteen days, during which recovery period improvement of general nutrition and prevention of complications were the aims. In the early treatment of a multiple injury the internal fixation of a fractured mandible or of one or both fractured arms might considerably improve the comfort and nutrition of the patient.

The best anæsthesia was a combination of general anæsthesia with local infiltration in skilled hands. Adequate local anæsthesia by nerve block was better than a poorly administered general anæsthetic.

Some of the problems related to the difficulty of assessing the injuries; if they were not apparent, these tended to be overlooked, unless after recovery a further detailed examination was made. Compatible blood for transfusion was available only after an hour. Resuscitation might be con-

sidered to have failed if the blood pressure would not remain above the 80 millimetres of mercury, systolic, and 60 millimetres, diastolic, level for half an hour after two episodes of rapid and adequate infusion. There was, as yet, no answer to the occasional development of a fatal fat embolism.

Neurosurgical Aspects of Major Trauma.

DOUGLAS MILLER (New South Wales) said that in any general major trauma, intracranial damage might not at first be apparent. Rupture of blood vessels was not immediately recognizable, and only after a time could increasing intracranial pressure be suspected. If the patient passed into coma before a diagnosis was made, the chance of recovery might have been lost. That should always be remembered in dealing with any type of severe trauma, and if there was a suspicion of such a possibility, general anaesthesia should not be administered for some hours. In other cases of trauma, it was the head injury which dominated the picture. It might present the clinical characteristics which indicated certain fatality and contra-indicated treatment to any head wounds or to other injuries.

Compound wounds of the head in severe trauma should be dealt with on usual principles, provided there was no evidence of very severe generalized underlying brain injury. Localized depressions were never responsible in themselves for coma, or for other severe brain damage. Those were the result of the impact sustained by the head.

The single sign of greatest importance in head injuries was the state of consciousness. Deepening unconsciousness bespoke increasing intracranial pressure, which was the only condition calling for urgent surgical intervention. The only operation ever indicated was the making of exploratory burr-holes sufficient for the evacuation of the blood.

Major trauma of the spine was likened to major trauma of the head in that the nervous tissue and not the bony coverings must take precedence in all surgical consideration. Soon after cord injury, assessment of the lasting damage could not be made. When cord injury appeared to be complete, no good purpose was served by operative or manipulative procedures directed to the spine as an urgent measure. Nothing was lost by awaiting developments for a few days. The interruption in function was due not to pressure from bone, but to the impact which caused the injury to the bone.

Fixation of a fractured or dislocated spine, if considered necessary, was best carried out after the early crisis of the injury had passed. In most cases very little good was done by such operations, which might merely add weight to the patient's already heavy burden.

Plastic Surgery.

A. R. WAKEFIELD (Victoria) considered the question from the point of view of plastic surgery. He said that the plastic surgeon's main contribution to the immediate surgery of trauma had been in the type of injury in which the immediate well-being of the patient was not threatened, but in which the ultimate result, unless skilled treatment was provided, would fall far short of functional or cosmetic perfection. Delegation of that type of patient to management at the house-surgeon level was deplored. In the pre-penicillin era, the necessity to leave surface wounds open precluded primary repair of deep structures. However, with more certain control of infection, primary repair of deep structures became possible, and the ability to close skin defects without tension became a necessary part of the traumatic surgeon's technique. It was in that field that the plastic surgeon, long trained in such techniques, was able to show the way. Other surgeons had reacted in various ways to those changes. Some had retrained themselves in rational methods of wound closure; others had been unable to relearn and had retained the techniques of the older era, or referred the patient to a trained specialist. Both groups commanded respect. However, one group would not retrain themselves, nor would they hand over suitable patients to fully trained surgeons, but preferred to operate after telephone conversations, correspondence, or a quick look

over a specialist's shoulder, under the false impression that they could now competently deal with any given case. Such conceit was to be condemned in the strongest terms. Teaching therefore had to concentrate on the application of technical methods, as well as on principles; that implied a concentration of cases in institutions suitable for such teaching. Dr. Wakefield in conclusion pointed out the dangers of teaching a change in principles without providing the technical means for putting them into effect.

Discussion.

B. KEON-COHEN (Victoria) supported the remarks of the speakers in the main, but took exception, first, to the rule of thumb transfusions advocated by Dr. Barbour, and, second, to Dr. Miller's remark to the effect that no useful purpose was served by immediate internal fixation for unstable fractures of the spine complicated by paraplegia.

G. KERRIDGE (New South Wales) asked Dr. Barbour two questions: (i) Why in hospital practice, where it was known that 60% to 70% of the *Staphylococcus aureus* population were penicillin-resistant, did he continue to give that antibiotic? (ii) Why did he give gas-gangrene antiserum?

Dr. Barbour, in reply, said that, although he knew that the antibiotic was often useless, he continued to give it to avoid recrimination.

NEVILLE SUTTON (Queensland) said that he had listened with very great interest to the papers, and thought that the subject of treatment of trauma was one of great and increasing importance in the present-day world. He wished to refer only to the difficulties of correlation of the treatment by the various specialist departments, and pointed out that there was no doubt that it was an urgent problem in all large metropolitan hospitals. Professor Sutton went on to say that he was also concerned with the difficulties of teaching the principles of the management of patients suffering from severe trauma, as he considered that it was of the utmost importance that such principles should be taught in the undergraduate course. The technical details of special types of treatment, of course, should be learned after graduation.

E. F. WEST (South Australia) stressed the need for teamwork in the management of patients suffering from severe surgical trauma.

W. L. FORSYTH (Victoria) pointed out that severe trauma was common in country practice. He thought that the principles of treatment should be made more widely known, particularly what primary treatment was expected of them.

CRAWFORD MCKELLAR (New South Wales) asked Dr. Miller to confirm his statement that there was no hurry to relieve any vascular obstruction which might be caused by depressed or displaced spinal fracture, for that did not seem logical. Referring to Dr. Wakefield's remarks, he suggested that too much credit should not be given to penicillin, as numerous compound fractures had been treated and closed successfully long before penicillin came into use; even in osteomyelitis, wonderful though penicillin had proved to be, the bad results of treatment before penicillin were often exaggerated and illustrated by the failures of inadequate technique or delayed operation. With the turn of the wheel against penicillin by the rise in bacterial resistance, younger surgeons might insufficiently appreciate the results still to be obtained from the application of surgical principles alone in wounds of the extremities—*débridement*, haemostasis and skin coverage without tension—all without antibiotics. Dr. McKellar acknowledged his particular debt to plastic surgeons in the treatment of wounds of the extremities and asked Dr. Wakefield's advice in two particular instances: (i) compound fracture of the tibia with major skin loss over bare bone; (ii) bare major tendons (without paratenon) with considerable skin loss in a situation where they could not be covered by local flaps—for example, *tendo Achillis* or *tibialis anterior*.

Dr. Wakefield, in reply, said that if closure could not be effected without tension, adequate *débridement* should be

carried out and the defect left for secondary repair within a few days by a surgeon skilled in that type of surgery.

A. I. RHYDDERCH (New South Wales) supported Dr. Douglas Miller in decrying internal fixation for unstable fractures of the spine complicated by paraplegia. He said that results equal to those being achieved in Sheffield were obtained in the Lancashire Paraplegic Unit, where no fixation was employed.

KONRAD HIRSCHFELD (Queensland) said that Dr. Wakefield had emphasized the need for early skilled treatment of severe injuries. He had also deplored the fact that often the initial treatment was given by a junior medical officer unskilled in any form of surgery. Dr. Hirschfeld thought that it was important to remember that when the general surgeons were in charge of the beds to which traumatic patients were admitted, the treatment was usually carried out by someone with some skill; but with the advent of the specialists, the patients were admitted to their beds. If the specialist himself was not available, the patients were still treated by a junior medical officer, who was no more skilled because he was an inexperienced junior plastic surgeon than he had been a week or two before when he was an unskilled "general" resident. In other words, if those patients were to be referred to the specialist, he must be available and be prepared to deal with them. It was very discouraging to find that, after one had told a resident medical officer to lose no time in calling in the specialist, the specialist had said that he would see the patient some days later.

Dr. Miller, in reply to Dr. Keon-Cohen, said that, while he deprecated early extensive treatment of fractures of the limbs in patients unconscious from head injury, if the patient survived for forty-eight hours, he was then prepared to get the patient to undergo the necessary treatment. He said that 90% of the mortality from head injury occurred in the first forty-eight hours and mostly within twenty-four hours. He also commented that, during a visit that he had paid to Stoke Mandeville, Dr. Guttmann had spent most of the time recounting the evils of plating.

SECTION OF OTO-RHINO-LARYNGOLOGY AND SECTION OF RADIOLOGY AND RADIO- THERAPY.

Carcinoma of the Larynx and Pharynx.

A COMBINED MEETING of the Section of Oto-Rhino-Laryngology and the Section of Radiology and Radiotherapy was held to discuss the subject of "Carcinoma of the Larynx and Pharynx".

SIR STANFORD CADE (United Kingdom) read the first paper, but this has not been made available for publication.

B. W. WINDEYER (United Kingdom) read the second paper. He said that it was necessary to make a sharp distinction between tumours arising in the pharynx and those arising within the cavity of the larynx. The pharyngeal tumours produced symptoms primarily related to the function of the pharynx, although they might produce secondary laryngeal symptoms. With pharyngeal tumours the prognosis was grave, whatever the site, and usually there was no alternative to radiotherapy; whereas with tumours of the larynx there was some prospect of permanent cure, and there might be a choice between radiotherapy and surgery.

Professor Windeyer pointed out that pharyngeal tumours usually gave rise to early lymph-node metastases; frequently the lump in the neck was the first thing complained of. The majority of patients with pharyngeal tumours were severely affected in their general condition when they presented for treatment, and only few were suitable for surgery. Recently supervoltage irradiation with a dose of 5000r to 6000r in six weeks had been employed with encouraging results. With laryngeal tumours, since the use of radiotherapy could possibly save the normal voice and

avoid tracheotomy in many instances, the assessment of what treatment should be adopted must be carefully made. There was a wide choice of therapy, from the Finzi-Harmer method of implantation of radium needles, through direct irradiation by low-voltage X rays, deep X-ray therapy in the 200 to 5000 kilovolt range and supervoltage irradiation to telerialium and the use of cobalt 60. For early, limited, unilateral growths radiotherapy was indicated; when the commissure and cords were extensively involved radiotherapy could still be used unless there was deep infiltration, and should be used if possible in order to preserve the natural voice. When there was deep infiltration or diffuse hyperkeratosis, or a subglottic growth, total laryngectomy was necessary. Supraglottic growths were usually lightly radiosensitive. The taking of repeated biopsies until the diagnosis had been established was essential.

Professor Windeyer then described the technique of irradiation methods and the management of the patient.

At the conclusion of Professor Windeyer's paper, he demonstrated by means of a wire recorder samples of vocal efforts by patients operated on for carcinoma of the larynx. Some patients had been treated years earlier by deep X-ray therapy or radium beam unit; others presented examples of the oesophageal voice after total laryngectomy for cancer.

J. B. CLELAND (South Australia) said that in Adelaide only seven patients out of 120 examined by him for carcinoma of the larynx had had early lesions suitable for the fenestration operation and Finzi-Harmer procedure. He raised the question of prophylactic removal of lymph nodes in cases of carcinoma of the larynx, and questioned whether radium beam therapy was preeminent, to the exclusion of other methods.

A. K. GREEN (Queensland) questioned the advisability of repeating deep X-ray therapy for recurrent cancer in the laryngo-pharynx.

G. C. HALLIDAY (New South Wales) referred to a patient with proven carcinoma of the larynx who had recently been treated by the Finzi-Harmer method. Dr. Halliday said that the lesion had disappeared, but that an area of hyperkeratosis remained. He asked whether he should wait to see whether there was a definite recurrence before performing laryngectomy, or whether that procedure should be carried out before the growth recurred.

D. G. CARRUTHERS (New South Wales) questioned the treatment of pharyngeal growths involving the posterior wall of the pharynx and in contact with prevertebral tissues.

Sir Stanford Cade, in reply, said in regard to prophylactic removal of glands that he had used that for ten years in cases of carcinoma in the tongue and the mouth, and had come to the conclusion that observation was preferable in the case of a patient who could be relied on to attend. For twenty-five years he had thought radium to be superior to deep X-ray therapy for conditions involving the laryngo-pharynx. Now supervoltage X-ray therapy would fill the same field as radium. He considered that repetition of deep X-ray therapy was sometimes possible for delayed recurrence after an interval of years. The question of malignant disease extending close to the prevertebral fascia was a vital one. If it was discovered at operation, he suggested the use of deep X-ray therapy post-operatively.

Professor Windeyer, in reply, referred to the question of preference for telerialium over deep X-ray therapy. He thought that excellent results had been obtained in the past with deep X-ray therapy, but agreed with Sir Stanford Cade that the harder quality of the telerialium beam was desirable. He said that there was good evidence to show that the shorter wave lengths caused less necrosis of cartilage. In fact, he would be loath to give up radium beam therapy in laryngeal lesions for supervoltage X-ray therapy and large cobalt 60 units.

In reply to Dr. Green, Professor Windeyer said that he would go further than Sir Stanford Cade and would say that it was never safe to repeat deep X-ray therapy for a recurrence if full dosage had been given originally.

In reply to Dr. Halliday, Professor Windeyer thought that the patient described would require total laryngectomy eventually, but that it might be safe to observe him for some years longer. Radiotherapy was considered unsuitable for the condition described.

SECTION OF PÆDIATRICS AND SECTION OF RADIOLOGY AND RADIOTHERAPY.

Reduction of Intussusception by Barium Enema.

A COMBINED MEETING of the Section of Pædiatrics and the Section of Radiology and Radiotherapy was held to discuss "The Reduction of Intussusception by Means of Barium Enema".

T. Y. NELSON (New South Wales) presented a series of 74 cases of intussusception in which the results achieved by using hydrostatic pressure with saline solution in 35 cases were compared with those achieved by using a barium enema in 39 cases. He said that the usual method employed at the Royal Alexandra Hospital for Children in the past had been to use saline solution under general anaesthesia according to the method used by Hipsley. In the barium series the reduction was achieved by using a barium enema without anaesthesia. The latter method was found to be satisfactory, and many of the babies were quiet during the procedure.

Of the 35 cases in which saline solution was used, reduction was effected in 22, but it was necessary to confirm the reduction by laparotomy in 10 cases. In the barium series reduction was successful in 28 of 39 cases, and in only one case was confirmation by laparotomy required.

Dr. Nelson stressed the clinical features and confirmed the findings in a previous series that in only about 50% of cases of intussusception the condition presented with a "classical" history and signs. Of the present series of 74 cases, it presented with a typical history in 34. The remainder were considered in groups according to the main presenting features. In the second group of 15 cases the onset was less dramatic; the baby "wriggled" in discomfort but did not scream. In the third group of 13 cases vomiting was the outstanding symptom. In the fourth group of four cases there were signs of marked shock, and in the fifth group of three cases the patient had symptoms of gastro-enteritis or developed an intussusception during an attack of gastro-enteritis. Dr. Nelson said that the recognition of those different methods of presentation was the key to early diagnosis, which should be the biggest factor in reducing mortality.

Dr. Nelson discussed the cases in which reduction was not successful and found that in both series there were some cases in which the intussusception was not reduced by enema but was easily reduced at laparotomy. The reason for that was not clear.

Comparing the results with a recent series published by Zachary, Dr. Nelson found that the method was most successful in babies with a delay of less than twenty-four hours before treatment was instituted. In that group the method with barium enema was successful in 82% of cases.

G. R. SILVESTER (New South Wales) said that the radiographic apparatus used was a filming fluoroscope, a 15% suspension of barium sulphate in tepid water, and a plywood frame on which the infant was immobilized. The apparatus for injection consisted of a self-retaining catheter connected by rubber tubing and metal "T"-piece to two one-litre saline bottles. The bottles functioned as reservoirs for fresh suspension and receptacle for returned suspension.

After preliminary setting up (during which time the surgeon and radiologist became accommodated) the injection was begun at low pressure and the initial phase of reduction carried out also at low pressure. During that phase two radiographs were exposed, which established the diagnosis of intussusception. Injection was then continued at the maximum pressure (42 inches) till reduction was

complete or till no further reduction occurred after pressure had been sustained at maximum for five minutes.

If reduction proceeded to completion, three further radiographs were exposed during the high pressure phase of injection. Those provided evidence of the site from which the apex of the intussusception originated (as outlined by Hellmer) and were the permanent record of the X-ray evidence on which the diagnosis of complete reduction was based.

If reduction did not occur, high pressure injection was discontinued after five minutes. The colon was allowed to empty. After a short rest a second injection was given. If that was unsuccessful, evacuation and a further rest were permitted, and were followed by a third injection.

At the outset of the trial it was decided that no attempt at reduction should consist of more than three injections, that the pressure of any injection should not exceed 42 inches, that no abdominal palpation during injection should be allowed, and that no anaesthetic should be given.

Dr. Silvester went on to say that radiological technique was directed to achieve three diagnoses. The first was to confirm, on X-ray evidence alone, the clinical diagnosis of intussusception; that had been achieved in all cases in the series. The second was to establish the site from which the apex of the intussusception originated; that had been feasible in 14 of the 17 cases in which the deliberate attempt had been made. The third was to determine the extent of reduction achieved; in that no false diagnosis of complete reduction had been made, though one laparotomy had been undertaken because of doubt, on X-ray evidence alone, of the completeness of reduction. Laparotomy showed that reduction was complete.

It was concluded that hydrostatic reduction of intussusception by barium enema was a more useful technique than hydrostatic reduction by normal saline because of its greater diagnostic scope and reliability. A further advantage was that no anaesthetic was required.

P. L. HIPSLEY (New South Wales), in opening the discussion, said that the death rate for intussusception, when all patients were operated on by an experienced surgeon, should not be greater than 3%; but if that was done, then about 50% would be operated on unnecessarily. The alternative to operation was the use of hydrostatic pressure, carried out either with saline, or with a barium enema given under pressure and with fluoroscopic control. He thought that most people would agree that, provided after such treatment one was able to diagnose with accuracy the cases in which an intussusception had been completely reduced, that method should be the one of choice to be used in all cases first, and only those patients should be submitted to operation in whom hydrostatic pressure had failed. The duration of the intussusception should not be over-emphasized; it was the variety which was important, and that could not be diagnosed beforehand. Dr. Hipsley went on to say that it was just on thirty years earlier, after treating 150 patients (the first 50 by operation and the next 100 by hydrostatic pressure) that he had described a method whereby it was possible to determine accurately that complete reduction had been effected. That method had been described in *THE MEDICAL JOURNAL OF AUSTRALIA* of August 14, 1926. The method to which he referred was distension of the abdomen which followed reduction, because of the passage of the enema through the ileocaecal sphincter into the small bowel. It was in 1925 that he had first used the barium enema method, to see whether it would give any additional help in the diagnosis of reduction. He did not attempt to visualize the process of reduction, partly because of the impossibility in those days of getting a radiographer at the time required, and partly because he found that it did not help to any extent in the diagnosis of reduction. It did help in confirming what he already knew—that the distension of the abdomen was indeed due to the enema passing into the small bowel, because one could see it there if an X-ray picture was taken where the abdomen was distended. He had soon abandoned that method as a waste of valuable time. To determine the fact of reduction, it was not necessary to see the barium enema actually passing through the ileo-

caecal sphincter when by palpation one could feel that the small bowel contained up to a pint or more of the enema according to the time spent in giving it.

Dr. Hipsley went on to say that the barium enema method had many disadvantages. Dr. Nelson in his small series gave a higher reduction rate after the use of that method. The barium method must be used in a well-equipped hospital, and must be carried out by a radiographer skilled in that particular work; but the surgeon must be present during the screening and must take the entire responsibility of the case, although he was passing on the diagnosis of reduction to the radiographer. If the radiographer was doubtful of complete reduction, the surgeon took over the case, and much valuable time was wasted before an operation could be proceeded with. Dr. Hipsley said that he really could not see a busy surgeon's being present, while all that was going on, when he realized that he could get all the information which he required by giving an enema under pressure, in a room adjoining an operating theatre, so that he could proceed with an operation if he failed to get the signs of reduction. The barium enema method took the treatment out of the hands of all those who could not get the facilities of a well-equipped hospital. Many cases of intussusception occurred in outback areas, and in places where it might be impossible to get the child to a hospital. Dr. Hipsley said that a case had been reported in the *British Medical Journal* some time previously in which both doctor and patient were snowed up during the middle of winter in Canada, and the patient was successfully treated by hydrostatic pressure. Dr. Hipsley said that hydrostatic pressure should never be used unless one was certain that one was dealing with a case of intussusception; for example, it should never be used in a doubtful case of appendicitis. Operation should always be performed if distension did not follow the use of hydrostatic pressure; and it should be remembered that when reduction had been effected, as shown by a distended abdomen, an operation was unnecessary, and if performed was more difficult and dangerous. If, after an attempt at reduction had been made, the abdomen remained soft and flaccid so that one could palpate either oedematous bowel or a suspected unreduced intussusception, one must operate to determine which condition was present.

A. MURRAY CLARKE (Victoria) said that as long as twenty-five years earlier Dr. Hipsley's results had been comparable to the best world results of five years earlier; but in spite of that no real attempt had ever been made in Melbourne to adopt the hydrostatic method of reduction. Dr. Clarke said that that mystified him. As a registrar he had attempted it, but gave it up, finding that the child became cold, no doubt from poor technique. He wondered why the method was not more widely used. At the present time in Melbourne they were using barium suspensions alone, and had a 60% reduction rate in 54 cases. He also had found a few irreducible intussusceptions which literally fell apart at operation. Dr. Clarke considered that the method offered great advantages, one of which was the avoidance of the risk of post-operative peritoneal bands leading to subsequent obstruction. He thought that in a very small percentage of cases the barium enema had been of diagnostic value also.

F. ARDEN (Queensland) said that the position in Queensland was similar to that in Victoria, and he also, in the light of recorded statistics, could not understand why the hydrostatic method was not more widely used. He said that the speakers had convinced him of the advantages of the barium enema method without anaesthesia over other methods; but he wanted to be reassured that there was no risk of X-ray burn from the long period of fluoroscopic screening, no pain and no great emotional trauma.

KATE CAMPBELL (Victoria) asked whether anti-spasmodic drugs would be of any help in the repeatedly difficult cases in babies aged under six months.

Dr. Nelson, in reply, said he was grateful to Dr. Hipsley for having taught him the hydrostatic method, but thought that there were reasons why the barium method would find general acceptance. Dr. Hipsley's figures and results were a tribute to his own personal skill, and it required

considerable experience to assess reduction by the saline method. The barium method under visualization was more certain, and for most surgeons would eliminate unnecessary laparotomy.

Dr. Murray Clarke had asked why the method had not achieved greater popularity. Dr. Nelson thought that there were several reasons. Gross had shown that he could achieve very satisfactory figures by laparotomy alone, and saw no reason to alter his methods. Gross also stressed the fact that blind reduction might miss a focal starting point, such as a Meckel's diverticulum.

Dr. Nelson saw no reason why a surgeon in the country should not give a small injection to start reduction before operation, if he had decided to treat the patient himself; but in general laparotomy would usually be the method, except in highly specialized institutions. In reply to Dr. Arden, Dr. Nelson said that there was no shock attached to the barium method, and many children were quite comfortable during the whole procedure. It was probably advisable that they receive some sedative, and Zachary had treated all his patients under rectal "Pentothal" anaesthesia.

In reply to Dr. Campbell, Dr. Nelson said that the present series had not shown any greater difficulty of reduction in the infants under six months, and anti-spasmodics had not been used. Dr. Nelson thought that the difficulty of reduction depended mainly on the length of time during which intussusception had been in evidence, but probably also on other factors.

Dr. Silvester, in reply, said that he had arranged with a physicist to measure the radiation output and had found it well within the limits of safety. That was partly due to the very high kilovoltage used, which permitted the use of a low milliamperage. He never exceeded a screening time of twenty minutes, and the period was usually between ten and fifteen minutes. That was only half the maximum permissible safety time.

SECTION OF PÆDIATRICS AND SECTION OF SURGERY.

Burns and Their Management.

A COMBINED MEETING of the Section of Pædiatrics and the Section of Surgery was held to discuss "Burns and Their Management".

F. K. S. HIRSCHFELD (Queensland) said that burns today presented one of the greatest challenges to surgeons. Immediate treatment had to be given for fright, pain, fluid loss and blood destruction, and treatment of the raw area to forestall infection. In any burn affecting over 10% of the body area, the intravenous administration of fluid was indicated; if the area was under 25%, plasma or electrolyte fluids would suffice, but if it was over 25%, half the fluid should be blood. For coverage, tulle gras and pressure or continuous saline baths could be used, but the exposed method was the best, the patient being allowed to lie on sterile sheets until a crust formed, a penicillin powder with lactone and "Monacrin" being used to prevent infection; after some ten days the crust separated and left clean new skin. Management of third-degree burns was different. As soon as the degree of burn had been diagnosed, excision and grafting was the best method, carried out if necessary in several stages. A protein-rich diet with a supplement of methionine was necessary, and supplementary blood transfusions were occasionally needed.

D. OFFICER BROWN (New South Wales) said that resuscitation and control of body fluids had reached such a stage that almost no burned person, if properly cared for, needed to die in the first few weeks. There were three principles—to combat shock and collapse, to prevent unnecessary infection and to graft as soon as possible. Open treatment, with good body fluid management, was the best. The hæmolytic streptococcus was no bar to skin grafting. Early grafting reduced fluid loss and toxic absorption, pain, dis-

comfort and deformities, and it allowed earlier mobilization. It should be done as soon as the area of full-thickness skin loss could be clearly defined. Thicker grafts were harder to manage, but gave the best results. Free grafts were best on the eyelids and around the nose; Wolfe grafts were best for lip repair. Neck contractures caused difficulty, and flap repairs were unsatisfactory. "Z" transposition was best for axillary burns; for limbs, thick free grafting should give uniformly adequate results.

E. S. STUCKEY (New South Wales) discussed the management of burns in childhood. He said that the child, especially the toddler, was particularly liable to accidental burns and scalds, and burns in that age group were more likely to lead to fatal shock than were burns of corresponding magnitude in an adult. It was very important to estimate the area of body surface affected, and how much of the lesion was mere erythema, how much of the area was blistered and how much was likely to be the site of full-thickness skin loss. In Dr. Stuckey's opinion, any child with more than 10% of its body surface burned should be given intravenous therapy; if the area was 20% or more, adequate intravenous therapy was essential if life was to be saved.

Dr. Stuckey drew attention to certain points about the fluid loss associated with burns, and said that intravenous therapy required fluid containing plenty of electrolytes and protein (or substitute for protein), which must be given in carefully considered quantities depending on the age and weight of the child and the area of body surface affected. Fluid replacement must be maximal in the first eight to twelve hours, considerable in the next twenty-four to thirty-six hours, and thereafter considerably reduced or suspended (in the adequately treated patient)—otherwise there was serious risk of overhydration with pulmonary or cerebral oedema. The best guides to adequacy of treatment were the patient's clinical state, the volume of urine and the haemoglobin level. Dr. Stuckey gave reasons why a pre-arranged programme was necessary for the intravenous treatment of incipient burn shock, and explained the formula used at the Royal Alexandra Hospital for Children. He went on to quote figures from experience at the same hospital, and made a number of points based on that experience. Burn-causing accidents were common in infancy, but most were easily preventable. The best first-aid treatment was to rush the child to hospital. The period spent in hospital depended mainly on the depth of the burn and on the presence or absence of gross infection. If skin grafting was required, the sooner it was started the better. For the local treatment of recent burns there were merits in both the closed (pressure dressing) and open (exposure) methods.

J. M. YEATES (New South Wales) opened the discussion. He emphasized that the improvement in measures of resuscitation had left new problems concerning patients who previously used to die, but who now survived with huge areas burnt, so that plastic surgeons sometimes wondered where they were going to get skin. Dr. Yeates thought that it was always wise to give a very guarded prognosis in cases of burns. They were always worse than they looked, often three times as bad, with regard to both the degree of shock and the local damage. Dr. Yeates asked what thickness of skin grafts it was best to use in children. He also asked in what way the speakers preferred to clean up burns if it was possible. He himself regarded "Cetavlon" as ideal. He thought that every hospital should possess an electric dermatome, even in country areas, as it was not too expensive or too difficult to use. He also referred to the occurrence of tetanus after burns, which was illustrated by a fatal case in his own experience.

R. A. McMAHON (New South Wales) asked whether the speakers used streptomycin solution for cleaning burns. In his own country area he had found that in the summer time occlusive dressings tended to raise the patients' temperature so high that they became delirious.

A. R. WAKEFIELD (Victoria) said that he appreciated the quiet rational approach of the speakers to their subject, and their avoidance of reference to primary maximal excision, the literature on which tended to give one a

distorted impression of its value. He had found recently on his trip abroad that surgeons overseas considered that no major change had taken place in the treatment of burns during the last few years, and they were cautious about talk of early radical excision which was still only in the experimental stage.

HARRIET E. FINNEY (Victoria) asked whether there was any place for cortisone or ACTH in combating shock. She said that she had treated in that way three patients who were very severely burned, and thought that the results were encouraging and that fluid loss was reduced, even though those substances were supposed to delay healing.

Dr. Hirschfeld, in reply, said he had not himself seen tetanus following burns. He thought that there was no useful place for treatment with ACTH or cortisone, except perhaps in a very early shock stage. Similarly, in his opinion excision had no place except for very small burns. When they were large, the patient was too ill. He thought there was still no answer to the problem of late infection in third-degree burns.

Dr. Stuckey, in reply to Dr. Yeates on the subject of the thickness of grafts, admitted that he still cut his grafts "freehand", but aimed at medium thickness in postage-stamp size. He thought "Cetavlon" excellent for cleaning, but not until after shock was under control. He agreed with Dr. McMahon that it was very easy to overheat burnt children in summer time.

Dr. Officer Brown, in reply, agreed that streptomycin could be very useful. With regard to the thickness of grafts, he said that he cut adult grafts somewhere between 12 and 14 thousandths of an inch, and children's grafts 10 to 12 thousandths, and he reminded those present that the thicker the graft, the more care was needed in its management.

SECTION OF PUBLIC HEALTH AND SECTION OF RADIOLOGY AND RADIOTHERAPY.

Mass Surveys for Pulmonary Tuberculosis.

A COMBINED MEETING of the Section of Public Health and the Section of Radiology and Radiotherapy was held to discuss "Mass Surveys for Tuberculosis".

P. S. WOODRUFF (South Australia) said that the object of mass surveys was the early discovery of cases of tuberculosis, with the dual aims of preventing spread of infection and allowing early treatment. The requirements of a screening process were that it must give a clear-cut result, be sufficiently selective and be economical. Well-conducted community X-ray surveys fulfilled those requirements. Groups might be selected for survey because of likely exposure to infection, special susceptibility, special risk of infecting others, occupational lung hazards, clinical state, or convenient location. Geographical distribution and occupations of patients in new cases discovered in South Australian surveys indicated that selection on any basis other than a regional population one would result in missing many cases. The following were the requirements for X-ray surveys: (a) high quality radiographs, which demanded proper technical supervision and work and good equipment; (b) adequate interpretation—"double reading" by radiologist and chest physician separately helped to ensure that; (c) reliable identification and records system, and follow-up and general organization; (d) means of ensuring appropriate investigation of abnormalities discovered.

Dr. Woodruff went on to discuss voluntary and compulsory surveys in South Australia. He said that voluntary surveys had been begun by the Adelaide City Council in 1941. The State began surveys in Adelaide and country towns in 1948. Industrial surveys were easy to conduct, but produced very few new cases of tuberculosis (1 in 4000). Community surveys, though widely publicized, were poorly attended. Legislation passed in 1951 enabled the

Minister for Health to require any groups of persons to present themselves for chest X-ray examination. Compulsory surveys began in March, 1952, and had continued, in both metropolitan and country areas. In six towns where both voluntary and compulsory surveys had been conducted, the latter showed increases in attendances varying from 13% to 114%. Full-scale publicity was as necessary in compulsory surveys as in voluntary ones. They found it most valuable to deliver to each house a leaflet setting out the place, dates and times of examination, and a map of the area affected. Compulsory surveys had been well received by the public in South Australia.

Referring to technical considerations, Dr. Woodruff said that in some places direct radiographs were not considered a necessary part of survey procedure. In the scattered population of South Australia, with few stationary X-ray or chest clinic facilities, they found them necessary, and suitable equipment was provided. Films were processed and read in a central headquarters in the Health Department, and suitable lines of investigation were recommended.

Dr. Woodruff then described the results of compulsory surveys. He said that 174,580 persons had been examined in compulsory surveys, of whom 103,312 have been in the Adelaide metropolitan area. Among them were 457 persons previously reported as suffering from pulmonary tuberculosis; 124 new cases were discovered. The greatest number of new cases (32) was in the forty to forty-nine years age group, and the greatest density was in that group and the sixty to sixty-nine years age group. In survey cases the patients had rather less extensive lung involvement than in those discovered by other means during the same period. In areas surveyed, a sharp rise in notifications occurred during and in the few months after the survey. That was followed in the next year by a marked fall in numbers of notifications, usually to well below the pre-survey level. Of the patients in the 50 new cases discovered by mass surveys in 1952 and 1953, one had died, one was totally disabled, five were still receiving treatment, four were convalescent, and 39 had returned to normal working lives.

A. H. McNAUGHTON (Victoria) discussed mass surveys for the detection of pulmonary tuberculosis. He said that fundamentally miniature X-ray chest surveys had been initiated for the purpose of cheaply and efficiently detecting cases of pulmonary tuberculosis in the apparently healthy portion of the community. The size of the film used varied, but in Victoria it was 35 millimetres. The decision to use that size had been influenced to a great extent by observers overseas, particularly by the work of Bikelo and his associates in 1947. The outlook of the lay examinee and the general practitioner was that a miniature chest X-ray film was of equal merit with a large film. That outlook should to some extent control the size of the film used.

Dr. McNaughton went on to say that miniature chest surveys covered directly or indirectly the following purposes: (i) to find disease in the lungs, primarily tuberculous, but also other forms of disease; (ii) to refer patients with abnormalities into appropriate channels for investigation and for treatment; (iii) to give both the public and the general practitioner a satisfactory service; (iv) to encourage health consciousness in the community. The need for all X-ray equipment to be assembled and mounted in vans was stressed.

Dr. McNaughton further said that a major problem was the reading of both large and small films. The differences between mass miniature radiography and private radiological practice appeared to indicate a necessity for a short period of training before the practitioner undertook to read the former class of film. In Victoria both radiologists and non-radiologists read miniature films; a comparison of the readings of the two groups was given. The "false negative" was always a tragedy. Over-reading, on the other hand, was a necessary part of the reading of 35-millimetre films. However, there were unnecessary recalls due to readers' not having the courage to regard anatomical variations, old rib fractures *et cetera* as normal

for a subject. Only at the time of follow-up investigation with a large film was any attempt made to take a history. At that time also a Mantoux test was performed when practical considerations permitted, and also sputum bottles were often issued. In mass survey work a reader was justified in recalling an examinee for a further large film investigation, rather than sending people with very doubtful findings to a chest clinic. He was not justified in recalling a subject more than once, or in suggesting lines of treatment.

Dr. McNaughton gave a comparison between proved and possibly active lesions found by mass surveys in Victoria in 1949 and 1954, also a table depicting the number of male and female subjects radiologically examined in each age group in 1954, expressed as percentages of the total number of male and female subjects examined. He also briefly mentioned carcinoma of the lung. Dr. McNaughton said in conclusion that mass X-ray surveys were of undoubted value in reducing the "silent" cases of active tuberculosis in the community, that frequent repetition of chest X-ray examinations was necessary, that all units should be assembled in vans, and that the film size should be such as would aid in the detection of conditions other than tuberculosis. Readers employed in mass radiography needed some instruction on the aims and limitations of mass chest X-ray surveys.

CHARLES RUBINSTEIN (New South Wales) said that the general world-wide fall of tuberculosis mortality which had begun many years previously had been considerably accelerated since the introduction of chemotherapy, but had not always been accompanied by a decrease in morbidity. During the period 1951 to 1954 the number of deaths in New South Wales had decreased by 45%, and in the same period the number of notifications had increased by 19%. The visible gap between the fall in mortality rates and the increase in the number of cases notified could be accounted for by the effective case-finding programmes conducted in New South Wales. In 1953 and 1954, 1,333,796 persons had been examined radiologically by the Anti-Tuberculosis Association of New South Wales (958,437) and the Health Department (375,359). Of all notifications of tuberculosis in 1954, 43.19% had come from mass surveys. A total of 620,739 persons had attended mass X-ray surveys conducted by the Anti-Tuberculosis Association in the Sydney metropolitan area. An average of 2583 X-ray pictures had been taken per day on four units. A total of 696 (0.1%) new cases of active pulmonary tuberculosis had been found; 24% had minimal disease, 65% had moderately advanced disease, and 11% had far advanced disease. Practically all cases were bacteriologically proven. There were twice as many cases in males detected as in females. In males the incidence was three and a half times higher in the group aged over forty years, and in females the condition predominated in the age group under forty years. Many patients received treatment at sanatoria or hospitals (377), and 249 were treated at home. In the latter group many were elderly patients who refused institutional care.

Dr. Rubinstein went on to say that there are two recognized methods of carrying out mass surveys: (i) "selective" screening of various groups showing high incidence or special risk—for example, patients attending private doctors or out-patients' departments, contacts, teachers, food handlers; (ii) "community-wide" surveys covering the entire population of a country, district or town—that was the ideal method advised by the Subcommittee on Mass Radiography of the International Union against Tuberculosis. It did not mean that certain selective groups should not receive particular attention at the same time. The effectiveness of the "community-wide" surveys in New South Wales could be judged by the large number of unknown active cases detected, which were undoubtedly responsible for the spread of infection in the community. Legislation compelling all persons over the age of fourteen years to undergo X-ray examination had assisted the case-finding programmes, though no prosecutions were instituted. No section of the community was exempt, and the highest incidence was detected in overcrowded districts.

It was doubtful if a large proportion of the patients could have been reached in time except by the community-wide surveys.

Dr. Rubinstein said that the mass surveys conducted in New South Wales were also of important epidemiological interest and should be of great assistance in defining the groups in the community most seriously affected. It was expected that, as a result of the successful case-finding programmes, the morbidity rate would begin to decrease coincidentally with the fall in mortality and lead to the ultimate control of tuberculosis in New South Wales.

SIR HARRY WUNDERLY (Canberra, A.C.T.), who opened the discussion, said that community-wide "X-ray" surveys still remained the best screening method leading to the detection of pulmonary tuberculosis amongst the apparently well. That applied both to communities in which the prevalence was low and to those in which the prevalence was high. He went on to say that at that stage it might be appropriate to define what was meant by "prevalence" and what was meant by "incidence". Incidence was based on the number of new cases developing during a given year, whereas prevalence referred to the total number of people suffering from any type of tuberculosis, some of whom might have been known for years as sufferers. It had been recommended that where the prevalence was low, mass surveys should be preceded by tuberculin skin-testing surveys and only the positive reactors radiographed. If the sole object of the surveys was the detection of pulmonary tuberculosis, that policy would be correct. But if it was agreed that the surveys had a much wider value, then all members of the population over a certain age, say fourteen years, should be radiographed.

Experience was showing that with the reduction of the number of unknown infectious cases in the community, the cost of finding new cases by the mass X-ray survey method was increasing. Administrators were frequently asked how a case-finding survey could be most economically conducted. Put in another way the question was whether, if a limited amount of money was available, the emphasis should be put on the bacteriological or on the radiological investigations. If the problem was only to find the infectious cases in a community, especially in an underprivileged or underdeveloped country, it was considered best to spend the limited funds on bacteriology, for its findings gave the answer. Radiography merely screened out those who must be bacteriologically investigated.

However, a community-wide X-ray survey did far more than that. It led to the detection of two very important groups of people, who, when investigated, might be non-infectious but who required constant supervision—namely, those persons whose disease was early and who were non-infectious in the public health sense, and those whose disease was arrested but was potentially active. To an audience such as the present one there was no need to say that the results of observation and treatment in the early cases were extremely good. Nor was it necessary to offer the reminder that those in the latter group (the inactive group) needed to be kept under regular radiological, clinical and bacteriological supervision.

Sir Harry Wunderly said that he would like to repeat that a community-wide X-ray survey still remained the best screening method leading to the detection of pulmonary tuberculosis in the apparently well. If that was accepted, two very pertinent questions must be answered at once: (a) What percentage of the population must be examined for the surveys to be of maximum value? (b) How often should such surveys be repeated?

In answer to the first of the questions Sir Harry Wunderly said that it had been shown over and over again that it was wasteful of man-power, equipment and film-base for children under the age of fourteen years to be included in a mass survey programme. Also it had frequently been demonstrated that for such a survey to be successful it must cover at least 85% of the eligible population. The nearer the coverage was to 100%, the better. As a general rule, those high percentages were unlikely to be obtained in surveys conducted on a voluntary

basis. Further, it was quite wrong to fix an upper age limit of sixty or sixty-five years. However, infirmity amongst the aged must be accepted as a valid excuse for not attending the X-ray surveys. Every effort must be made to radiograph in their own homes the chests of the "non-attenders". The aged were providing a very large number of infectious unsuspected cases of tuberculosis.

Except in areas where there was a special hazard, for example mining, it was not necessary to survey a community more frequently than at three-yearly or five-yearly intervals. If the previous survey had had a satisfactory coverage, the "second time round" after a shorter interval than three years would bring to light very few unknown cases. Sir Harry Wunderly thought that the present experience in Sydney and its crowded suburbs was supporting that opinion.

Sir Harry Wunderly said that a few minutes previously he had referred to the possible wider use of mass surveys than just to lead to the detection of tuberculosis amongst the apparently healthy members of the community. As that might be considered outside the scope of the discussion, he would do no more than mention two very important conditions, the detection of which might depend on the investigation—namely, carcinoma of the lung and the abnormal cardiac silhouette. He knew there was distortion when the tube-film distance was 30 to 36 inches; but that distance was constant, so the distortion was also constant. It must be admitted at once that many of the variations in the cardiac silhouette were of no more significance than calcified Ghon's foci or "pleural caps" and should not be made subjects of further investigation.

Referring to his previous statement that community-wide surveys should be repeated at three-yearly or five-yearly intervals, Sir Harry Wunderly said that perhaps the latter figure would be proved to be correct. But what was to be done when the surveys were not being made? He believed that there were certain groups in the community who should have their chests radiographed whether there was a mass survey operating or not.

Sir Harry Wunderly said that, attention having been given to the apparently healthy, he now wanted to consider the apparently ill and those who were really in bad health. They included: (i) The in-patients and out-patients of hospitals. (ii) The patients of private practitioners. In Great Britain, Canada, the United States of America, and Australia many practitioners were discovering the value of having one case-finding chest X-ray film taken of their patients, especially those with symptoms which might be referable to pulmonary disease. Not so very many in-patients were found to be suffering from unsuspected tuberculosis, but many out-patient physicians and surgeons had been surprised by the number of times they had written "rpt. ambo" when the taking of a radiograph and a sputum test might have reduced the number of attendances and certainly would have diminished the risks run by fellow out-patients. (iii) Contacts and arrested cases. Sir Harry Wunderly said that it was so very obvious that he would not do more than mention the need to keep contacts of known infected patients and "arrested cases" under constant supervision, which must include radiological and bacteriological follow-up. The same applied to the necessity to examine, radiologically, all working "at risk". (iv) All who were closely associated with their fellows, such as food-handlers, hairdressers and teachers, and especially those who were closely associated with children. They should have radiographs taken of their lungs every twelve months. Also every prenatal patient should have her lungs radiographed quite early in her pregnancy. Sir Harry Wunderly said that it was his considered opinion that if the groups mentioned were radiologically examined in the country areas it would be unnecessary for mobile X-ray units to revisit those areas. But the efficacy of the examination of the groups depended largely on the active enthusiasm and cooperation of the medical profession.

On the question of equipment, Sir Harry Wunderly said that there were many reasons why the 35-millimetre film was originally selected. Being a size which was used

commercially, it was easy to obtain. That was so when film-base was in very short supply. It used only one-quarter of the area of film-base required for 70-millimetre films and was easy to store. The physicists stated that the resolving power of the small lens was greater than that of the four-inch by five-inch and of the 70-millimetre. All who had worked with it were agreed that the mirror-camera system was a great advance on the lens system. In fact, with the use of mirror cameras and 70-millimetre unperforated film and, more recently, 100-millimetre film, the radiographs were of such excellent quality for the purposes of selecting those members of the community who were in need of further investigation that the decision could be made on the miniature films without having to take a fourteen-inch by seventeen-inch radiograph. The 70-millimetre and 100-millimetre films could be attached to the patients' record cards and, except in rare instances, might make the taking of larger radiographs unnecessary. When advice could be given about the necessity for further investigation without the need to wait for a report on a large film, the subject was saved many days, if not weeks, of anxiety, and that was extremely important.

Sir Harry Wunderly summarized his remarks in the following points: (i) Community-wide X-ray surveys remained the best screening method leading to the detection of pulmonary tuberculosis in the apparently healthy. (ii) If those screening methods were to cover more than 85% of the eligible population, they should be conducted on a compulsory basis, and children under the age of fourteen years should not be included. (iii) There should be no upper age limit, but any persons unable to visit the survey unit on account of infirmity should be radiographed in their own homes. (iv) It was unnecessary to repeat the surveys more frequently than three-yearly to five-yearly. (v) The surveys were only screens and must be followed by complete bacteriological and clinical examinations of the suspects. (vi) Certain groups needed to be kept under constant radiological surveillance. (vii) Even when the incidence of tuberculosis was very low and the cost of finding new cases very great, the surveys were worth while, for they could assist in the early diagnosis of cancer of the lung and could call attention to patients with significantly abnormal cardiac silhouettes. (viii) It was probable that mirror camera units with 70-millimetre unperforated or 100-millimetre films would, in large measure, make the taking of 14-inch by 17-inch radiographs unnecessary. (ix) Care in the processing room was just as important as care in the application of radiographic techniques.

A. H. PENINGTON (Victoria) asked if a compulsory survey actually covered the total of those who had been ordered

to undergo radiological examination. He said that checking surely could not rely on electoral rolls, which were not up to date. Some other method of checking, such as by police notification and door-to-door order, must be necessary. He went on to say that the method was a coarse screen and must be recognized as such, particularly in lightly infected communities. As Dr. McNaughton had shown, the best of reading missed occasional cases. However, the method was extremely valuable. In conclusion, Dr. Penington asked if it would not be better to raise the minimum age of compulsory examination to sixteen years.

BRUCE WHITE (New South Wales) referred to the fact that the percentage of tuberculosis reactors in certain parts of New South Wales was very low, as it was in some other centres in the South-East Asian areas and New Guinea. He asked if it was worth while sending X-ray units to such areas as the highlands of New Guinea, or even into parts of New South Wales.

DR. DEANES (Victoria) said that the speakers had referred to the high incidence of tuberculosis in the upper age group. He suggested that in the investigation of that group it might be useful to have visits paid to the homes of old people by a tuberculosis nurse trained in the collection of sputum.

G. McMANUS (New South Wales) referred to the possibility that among those who failed to report for further examination the percentage of tuberculosis might be higher. He asked Dr. Woodruff what the findings had been in South Australia in that respect.

Dr. Woodruff, in reply to Dr. Penington, said that of course the use of electoral rolls meant that the age group of fourteen to twenty-one years was missed. An attempt was being made to check the others. He said that there had been an initial response of over 90%, and of those who failed to turn up for the first time replies were received from about 90% on further inquiry. Of those who failed to reply, many were over the age of seventy years and some had left the area. Only 3% to 4% were without a legal or useful excuse, and most of those later agreed to undergo X-ray examination. In reply to Dr. McManus, Dr. Woodruff said that he was not aware of any active cases which had been discovered amongst that group.

Dr. Rubinstein, in reply to Dr. Bruce White, said that he thought that surveys were even more important in the areas where there was a low reactor rate, in order that the early infectious patient might be detected. In relation to that, he referred to epidemics of tuberculosis that had occurred, in his experience, amongst large susceptible groups.

Section of Anaesthesia.¹

President: H. J. DALY, M.B., Ch.M., F.R.A.C.P., F.F.A. (R.C.S.), F.F.A. (R.A.C.S.), New South Wales.

Vice-Presidents: R. H. ORTON, M.B., B.S., F.F.A. (R.C.S.), F.F.A. (R.A.C.S.), D.A., Victoria; Mary T. Burnell, M.B., B.S., F.F.A. (R.A.C.S.), South Australia; Jean R. Oakes, M.B., Ch.B., Tasmania; J. Woodley, M.R.C.S., L.R.C.P., L.D.S. (R.C.S.), D.A. (R.C.P. & S.), M.F.A. (R.A.C.S.), Queensland; T. R. Morley, M.R.C.S., L.R.C.P., Western Australia.

Honorary Secretary: Dr. P. L. Jobson.

President's Address.

HARRY J. DALY (New South Wales) took as the subject of his president's address "Anaesthetics Over Three Decades: A Reminiscence". He said that progress in anaesthetics since 1920 had been very great, and as surgery depended so largely on anaesthesia, progress in anaesthesia had helped progress in surgery. In 1920 the most common method had been the use of "open ether"; sometimes the Clover's inhaler had been used. Chloroform given through a tube inserted into a tracheotomy incision was used for face and neck operations. Ethyl chloride was used, despite its risks, for induction, or for short periods alone. Lidwill's ether apparatus still had a wide use, and his electric stimulator closely forestalled the modern defibrillator.

Specialists in anaesthesia first graduated from the ranks of the physicians or general practitioners, and were largely self-taught. Nitrous oxide and oxygen anaesthesia was used almost exclusively by dentists. Blood transfusion was a tedious and unsatisfactory process. Ethylene came into use in 1926 but did not last long; "Avertin" had a great vogue after 1929. "Evipan Sodium" came into use in 1933, but was later displaced by "Pentothal". Cyclopropane was also displaced by "Pentothal". Curare and later d-tubocurarine as relaxants followed.

Cardio-Respiratory Arrest in the Anaesthetized Subject.

P. L. JOBSON (New South Wales) read a paper on "Cardio-Respiratory Arrest in the Anaesthetized Subject". He defined cardiac arrest as inefficiency of circulation to the vital centres due to central circulatory failure. The signs were the patient's colour and general appearance, and the absence of palpable pulse or heart beat. The causes were oxygen lack, carbon dioxide excess, overdose of anaesthetic agent and reflex nervous causes, as well as pre-existing disease. The treatment was immediate thoracotomy with cardiac massage, inflation of the lungs with oxygen and injection of a pressor drug. Dr. Jobson gave details of the method, including the way in which an incision was made through the fourth left intercostal space, and the heart grasped between both hands and compressed rhythmically at a rate of 60 to 70 per minute. Defibrillation, if necessary, was done with electric shocks administered with 110 volts, two amperes, at 50 to 60 cycles per second for 0.2 to 0.5 second. The lungs were inflated with oxygen or air by means of a gas machine or bag, or by blowing down a tube suitably connected.

Discussing prophylaxis, Dr. Jobson said that it covered avoidance of the causes set out and gave figures to show the efficacy of the simple measures of careful avoidance of oxygen lack, carbon dioxide excess and anaesthetic over-dosage, and of the administration of adequate doses of atropine and hyoscine. It also included care in the use of thiopentone, neostigmine and hypotensive drugs, and reducing irritation of the respiratory tract. In conclusion, Dr. Jobson suggested that cardiac massage should be carried out whenever cardiac arrest occurred, but raised

the question whether such resuscitation would always be in the best interests of the patient.

W. W. WOODWARD (Tasmania) asked whether any of those present had had experience of the cardiophone or the pacemaker. Referring to the cardiophone, Dr. Woodward said that an audible as opposed to a visual record of the heart beat during operation was needed. The anaesthetist already had enough to look at. Dr. Woodward also asked whether atropine should be given again at the time of extubation, or in thoracic operations at the time of probable vagal stimulation—during dissection of the lung hilum.

C. C. McKELLAR (New South Wales) asked, first, how long Dr. Jobson recommended continuing cardiac massage, and, second, to what extent absence of bleeding from the wound was an indication of cardiac arrest and if there could be oozing in the presence of cardiac arrest.

MARY BURNELL (South Australia) considered it most important that the treatment of cardiac arrest should be brought to the notice of all medical practitioners, as the patient's life depended upon prompt action. She also thought that it was essential during administration of any anaesthetic to have a bag and mask and oxygen to hand.

RUTH MOLPHY (Queensland) asked Dr. Jobson if he considered pupillary dilatation a reliable sign in a case of cardiac arrest.

Dr. Jobson, in reply to Dr. Woodward, said that he considered the use of additional atropine advisable in the circumstances mentioned. He had not had any experience with a cardiophone or an artificial pacemaker.

In reply to Dr. McKellar, he said that the duration of resuscitative measures in the absence of an early response depended on the circumstances of the cardiac arrest in relation to the patient. Half an hour was usually given as an arbitrary limit. During cardiac arrest bleeding was absent; certainly no spurs were seen. Large veins, if cut, would bleed after death.

In reply to Dr. Molphy, Dr. Jobson said that he regarded the pupillary response as variable and placed no reliance upon it whatsoever. He thought that one must be guided by the other signs of cardiac arrest.

Clinical Impressions of Chlorpromazine.

R. W. GREVILLE (Victoria) read a paper entitled "Clinical Impressions of Chlorpromazine". He said that there was a great individual variation in response to chlorpromazine, but usually it potentiated both thiopentone and pethidine, lessened the occurrence of tachycardia early during anaesthesia, and reduced post-operative nausea and vomiting. However, as toxic effects and post-operative sequelae did occur, chlorpromazine should be given only when definite indications for its use existed; such indications were when much haemorrhage or tissue trauma was expected, or when it was desirable that the patient should cough freely, breathe deeply and remain well hydrated, as after thoracotomy and certain upper abdominal operations.

J. N. McCULLOCH (New South Wales) asked Dr. Greville whether the patient who suffered an injury from the detonator received any blood transfusion.

¹ The meetings of the Section of Anaesthesia with the Section of Obstetrics and Gynaecology and the Section of Pediatrics, with the Section of Medicine and Experimental Medicine, and with the Section of Naval, Military and Air Force Medicine and Surgery have been recorded.

Dr. Jobson said that the patient had received five pints of blood during the operation, which was a long procedure.

A. SHULMAN (Victoria) said that in the treatment of patients with inoperable carcinoma by means of large doses of morphine he had found that chlorpromazine appeared to potentiate the effect of the morphine.

N-Allylmorphine.

ANTHONY S. PATON (New South Wales) read a paper entitled "An Appraisal of N-Allylmorphine". He said that that drug antagonized the respiratory depression of morphine; its effects varied, in that in the non-narcotized subject it caused depression of respiratory volume and of blood pressure, but in the narcotized subject it had almost the opposite effect, and if given prior to morphine it prevented its depressant effects. Its mode of action was subject to speculation. It would antagonize various other drugs with properties like morphine. Its clinical use was in narcotic depression, in obstetrics, and in the diagnosis of drug addiction (by producing acute withdrawal symptoms).

H. DALY (New South Wales) said that he had been interested to hear that "Nalline" would antagonize spasm of the sphincter of Oddi due to morphine, and wondered whether it would be of value in the treatment of the occasional patient who had severe pains from that mechanism after morphine had been given before operation.

A. Shulman (Victoria) referred to "Megimide" and "Daptazole", and said that further comments would be made in his paper which was to be read later in the week.

The Use of Barbiturate Antagonists After General Anæsthesia with Thiopentone.

H. M. WHYTE and ANTHONY S. PATON (New South Wales) presented a paper entitled "A Preliminary Report on the Use of Barbiturate Antagonists following General Anæsthesia with Thiopentone". The paper reported that when 15 patients were treated with "Megimide" and "Daptazole" after thiopentone anæsthesia there was great variation in results, possibly because although the amounts of thiopentone which had been given varied widely, the amounts of the antagonists had been standardized. There were few instances of prompt and dramatic recovery of consciousness, but possibly the small series reported did not allow definite conclusions to be made.

A Review of Anæsthetics Overseas.

J. F. McCULLOCH (New South Wales) read a paper entitled "A Review of Anæsthetics Overseas". He said that the technique and application of hypothermia were less well organized than was expected; some workers used surface cooling, others intravascular cooling with an open thorax. Surface cooling might be effected by immersion in cold water or by the application of ice bags or a cooling blanket. The advantage of intrathoracic intravascular cooling was that it might be deferred until the surgeon had decided on the scope and nature of the operation. Ventricular fibrillation was a hazard, but it occurred most commonly below a temperature of 30° C. and in the presence of cardiac stimulation, in which case the heart was under direct vision. Most authorities insisted on full muscle relaxation with control of respiration. That limited shivering and carbon dioxide retention. In the neurosurgical clinic in Toronto they preferred spontaneous respiration. The "lytic cocktail" was not used very commonly as an aid to cooling. Hypotension was widely used in a variety of cases. The methonium compounds were less popular than "Arfonad", which was commonly used in an intravenous drip administration. Hypotensive spinal analgesia was used in Edinburgh as another important means of giving a bloodless field. Thiopentone was being used with more circumspection, the dosage now being commonly recorded in milligrammes, not grammes.

Respiratory Arrest Under Spinal Anæsthesia for Cesarean Section.

RUTH MOLPHY (Queensland) described a case of respiratory arrest under spinal anæsthesia for Cesarean section. She said that the patient was a *primipara*, aged twenty-one years, who had had Cesarean section performed for severe toxæmia. On March 20 Dr. Molphy administered a spinal anæsthetic at 2.42 p.m. for the operation. The patient received atropine ($\frac{1}{100}$ grain forty minutes before operation) and ephedrine (three-quarters of a grain, five minutes before the spinal anæsthetic). The anæsthetic solution was 1.6 cubic centimetres of "Nupercaine" (1 in 200) in 6% glucose solution, and it was injected intrathecally between the third and fourth lumbar spines. Within three minutes of the injection the patient became restless and said that she could not breathe. Within five minutes of the injection she had lost her voice and had a negligible tidal volume, and artificial respiration was necessary, as she was becoming cyanosed despite the administration of oxygen. A 50% mixture of nitrous oxide and oxygen was used to inflate her lungs. With that mixture she soon lost consciousness and became apnoeic. She remained in apnoea for one hour, despite efforts to encourage normal respiration after the baby was delivered at 3 p.m. in good condition. Inadequate diaphragmatic respiration returned at 3.45 p.m., soon after intubation had been performed. There was no return of intercostal power for three more hours; during that period the patient was kept on the anæsthetic machine and her respiration was aided. She was allowed to wake up at 6.45 p.m., when it was found that she still had skin anæsthesia to the first thoracic nerve root. With the onset of anæsthesia this patient suffered a fall in blood pressure to 85 millimetres of mercury, systolic (from 160 millimetres, systolic, and 110 millimetres, diastolic). Her pressure stayed between 85 and 90 millimetres of mercury, systolic, until she was given 0.5 milligramme of ergometrine as the baby was delivered; the pressure then rose to 170 millimetres of mercury, systolic, and 110 millimetres, diastolic, and remained satisfactory. The patient was well after the operation apart from a mild cough. She was not particularly concerned about the episode, and she said that she felt much better as soon as her breathing was aided, and she went to sleep soon after.

Dr. Molphy said that there were several features about the case which she wished to stress: (i) The technique was one used as a routine at the Brisbane General Hospital to attain anæsthesia to the level of the sixth to eighth thoracic nerve roots. (ii) A very high level of anæsthesia was rapidly obtained, and it resulted in severe respiratory embarrassment. (iii) Artificial respiration by inflation of the lungs was an essential life-saving measure. The case had spurred her to read the literature more extensively than she had done in the past. She found that most authors who had had really extensive experience with spinal anæsthesia in Cesarean section stressed the following points: (i) The administration of oxygen to the mother throughout the procedure was essential, because the uterus impeded the diaphragm. (ii) The pregnant woman could be anæsthetized with a smaller dose of drug than the non-pregnant woman. (iii) The pregnant woman was more likely to suffer a fall in blood pressure after blocking of the sympathetic nerves than the non-pregnant woman.

Dr. Molphy said that she had then given some thought to the possible reasons why the pregnant woman should be unduly susceptible to the anæsthetic effects of local analgesics in the spinal theca, and why her blood pressure should fall more easily; she had sought something in the alterations in physiology and anatomy associated with pregnancy. She suggested that in the supine position there might be a reduction in the capacity of the spinal theca in pregnancy, which was related to engorgement of the epidural veins resulting from pressure on the posterior abdominal wall by the enlarged uterus, which caused interference with the flow of blood in the iliac veins and inferior *vena cava*. That could cause the usual amount of drug to produce unusually high anæsthesia, especially if the supine position was assumed suddenly immediately

after injection of the drug. Dr. Molphy thought that diminished neuronal resistance as an explanation of unduly high anaesthesia was at present unproven. By a series of radiographs she had shown that alteration in the spinal curves associated with pregnancy was unlikely to be a major factor in producing dangerously high anaesthesia.

In relation to the altered blood pressure response, some reason for increased post-arteriolar pooling must be sought. It might lie in the existence of an unusually high vasomotor (including venomotor) tone of nervous origin in the pregnant woman, so that spinal anaesthesia resulted in a greater than normal increase in capacity of the circulation. On the other hand, it might be that loss of normal vasomotor tone in the pregnant woman, whose circulation was already coping with a large uterine blood flow, and who in the supine position had impaired venous return from the legs due to the pressure of the uterus, was enough to result in just sufficient post-arteriolar pooling to produce a greater fall in cardiac output and arterial blood pressure.

Dr. Molphy finally suggested the following rules to be observed if spinal anaesthesia was to be used in pregnancy:

- (i) Spinal anaesthesia should be used only if the anaesthetist was thoroughly acquainted with its general use.
- (ii) Spinal anaesthesia should be avoided in the dehydrated patient, in the exsanguinated patient, and in a patient whose blood pressure was below 110 millimetres of mercury, systolic.
- (iii) The patient should be breathing 100% oxygen throughout, and the means of inflating her lungs should be immediately to hand.
- (iv) An intravenous infusion should be running and blood readily available; vasoconstrictors should be used and the dangers of synergy between vasoconstrictors and oxytocic drugs should be remembered.
- (v) A hypobaric solution should be used. The puncture should be made with the patient on her side, and she should be turned gently; pressure of the thighs on the abdomen should be avoided, the head should be well flexed; 5° of "head-down" position should be maintained for one minute. Half to two-thirds of the dose normally used in general surgery should be employed.
- (vi) The patient should be carefully observed throughout.

Dr. Molphy said that she believed thiopentone, succinyl choline and nitrous oxide anaesthesia, when given by an experienced administrator, gave as good results with the baby as spinal anaesthesia, and, where the mother was concerned, gave safer, more controllable and more widely applicable anaesthesia.

A. DISTIN MORGAN (New South Wales) mentioned a case of respiratory and cardiac arrest that he had encountered during administration of spinal anaesthesia for laminectomy. He said that the catastrophe was due to medullary coning from loss of cerebro-spinal fluid from the spinal theca during the operation; at post-mortem examination the patient was found to have a silent parietal lobe tumour. Dr. Morgan wondered if any changes in brain volume and cerebro-spinal fluid pressure secondary to a fall in blood pressure could have caused medullary pressure in Dr. Molphy's patient.

Another speaker asked Dr. Molphy if she would give a spinal anaesthetic to a patient with pulmonary oedema from toxæmia in pregnancy.

B. E. DWYER (New South Wales) said that he favoured spinal anaesthesia for Caesarean section, but agreed that a smaller dose than normal should be used; he had seen 3.1 cubic centimetres of heavy "Nupercaine" solution produce anaesthesia to a level between the umbilicus and the xiphisternum. He said that he had worked overseas in a department where spinal anaesthesia was widely used for obstetrics, and he had not seen any trouble.

Dr. Molphy, in reply, said that she thought that the question on pulmonary oedema was difficult to answer. Theoretically a sympathetic blockade should help such a patient, but, if a spinal anaesthetic was given, considerable muscular paralysis would be produced; that would impede pulmonary ventilation when the gaseous exchange in the lungs was severely impeded by the oedema fluid, which even when the prime cause was removed would take some

time to be resorbed; during that time the patient might suffer considerable anoxia. That anoxia perhaps could be successfully combated by inflation of the lungs with oxygen under pressure and aspiration of the trachea. However, Dr. Molphy considered that she probably had not the courage to try such a procedure with such a patient.

EMERY ROVENSTINE (United States of America) remarked that there were two patients to be considered, the mother and the foetus. Professor Rovenstine did not like spinal anaesthesia, as a fall in blood pressure would cause decreased placental blood flow. He said that it was important to remember, in the use of depressant drugs, that the duration of their exhibition was important; for example, the foetal blood concentration of cyclopropane approached the mother's blood concentration only after fifteen or twenty minutes. Professor Rovenstine said that he did not use relaxants, as he considered them out of place; relaxation was not needed for Caesarean section.

Induced Hypotension in Anaesthesia.

S. V. MARSHALL (New South Wales) discussed induced hypotension in anaesthesia. He said that the use of induced hypotension during surgical operations had been the subject of numerous articles during recent years. Much controversy still existed regarding the merits of the procedure, the hazards of which were now becoming more fully appreciated. The hypotensive effects of chloroform, bromethol ("Avertin") and thiopentone narcosis, and of spinal analgesia had been known and utilized for years. Nevertheless, the attendant dangers were recognized, and the necessity for maintaining blood pressures at approximately normal levels throughout most operations was generally acknowledged. Thus the emphasis up to the present had been on vasopressor drugs, plasma expanders and blood transfusions, which were sometimes used to excess. Gardner in 1946 had initiated a challenge to that concept by his use of deliberate bleeding to produce hypotension and lessen haemorrhage during neurosurgical operations. Later, widespread peripheral vasodilatation, produced either by total spinal analgesia or by ganglionic sympathetic blockade, became popular and received enormous advocacy. Finally, "Arfonad", an agent acting on both sympathetic ganglia and the peripheral vessels, was introduced. Because of its comparatively transient action, this drug offered prospects of greater controllability than the other procedures afforded.

Dr. Marshall went on to say that induced hypotension was best obtained by a combination of methods. Moderate narcosis was important as a basis, to which posture, adequate lung ventilation, carefully regulated ganglionic blockade and peripheral vasodilatation were added. No one item might be pushed to excess, and each should be carefully regulated. In operations on the upper part of the body a moderate anti-Trendelenburg tilting of the table had useful ischaemic effects. Even the sitting posture was safe, provided that narcosis was light and of non-toxic character. The lateral posture also was valuable, especially for spinal operations. Those postures did not interfere significantly with lung ventilation or circulatory efficiency. The prone, "jack-knife", steep Trendelenburg and other constrained postures were deleterious, because they hampered breathing, venous return and cardiac output. Hypoxia and hypercapnia occurred, and so venous congestion and oozing became severe. It was futile and dangerous to give a vasodepressor drug in such circumstances.

Dr. Marshall then said that owing to the risk of neurological and other complications, high spinal analgesia was not warranted for purely hypotensive purposes; but since it supplied analgesia as well as relaxation, it was valuable for many spinal operations, provided the hypotensive effect was properly regulated. Epidural analgesia also had useful possibilities in that regard. Ganglionic blockade with hexamethonium had been widely investigated, as well as being the subject of many favourable reports. There had been a tendency in its use to discard ordinary prudence and to attribute to it an innocuity which subsequent developments had falsified. The procedure of its adminis-

tration was onerous and the effects were unduly prolonged, necessitating much expert medical and nursing after-care. A recent analysis of nearly 28,000 cases, in the majority of which methonium compounds were used, showed a mortality rate of 1 in 291 and an incidence of relevant non-fatal complications of about 1 in every 31 cases. Those figures warranted very serious attention. "Arfonad", or trimethaphan camphorsulphate, was superior to the methonium compounds. Since it was rapidly eliminated, its effects were profound yet transient, provided that over-dosage and cumulation were avoided. It was given as a 0.1% solution by the intravenous intermittent drip method, usually in conjunction with endotracheal nitrous oxide and oxygen anaesthesia, curarization being employed if necessary. The dosage was at all times correlated with the fall of blood pressure, the optimum level being about 80 millimetres of mercury. Adequate lung ventilation was practised throughout, manual aid being given if necessary. The "Arfonad" was stopped as soon as the need for hypotension had passed, the blood pressure was allowed to rise and surgical haemostasis was then secured. That rise occurred quite rapidly, and vasopressor stimulants were not required.

In conclusion, Dr. Marshall said that in view of the hazards involved, the scope of induced hypotension in surgery was limited to special operations of severe or life-saving character, which could not be performed without recourse to temporary generalized ischaemia.

Anaesthesia in Ophthalmic Surgery.

JEANNE M. COLLISON (New South Wales), discussing anaesthesia for ophthalmic surgery, said that it might be local, general or a combination of the two. The changing face of ophthalmic surgery and the availability of new methods of anaesthesia and of skilled workers had increased the number of operations performed under general anaesthesia. Satisfactory anaesthesia involved careful pre-operative assessment and premedication, and smooth induction and maintenance of the anaesthesia, with special emphasis on the absence of coughing, straining and laryngospasm. The presence of a clear airway and oxygen administration were also important. After operation, restlessness and vomiting were to be avoided. It was not the method of anaesthesia which was all-important, but the skill of the anaesthetist.

EMERY ROVENSTINE (United States of America) emphasized the need for a quiet eye and no vomiting. He thought that both deep narcosis and anoxia predisposed to vomiting. Professor Rovenstine said that he used a pharyngeal airway and small doses of relaxants to relax the orbicularis muscles. For children he liked to give barbiturates *per rectum*.

R. W. GREVILLE (Victoria) stressed the fact that many of the patients presenting for ophthalmic surgery were elderly and "poor risks", and that it was most important to maintain adequate oxygenation of such patients, as they had poor respiratory and cardiac reserves. Dr. Greville said that he knew of four cases of cardiac arrest during cataract removal under general anaesthesia.

Anaesthesia in Intestinal Obstruction.

L. T. SHEA (New South Wales) read a paper entitled "Anaesthesia in Intestinal Obstruction". He said that certain anaesthetic difficulties were common to all cases of intestinal obstruction; they were: (i) the likelihood of vomiting and the risk of aspiration, (ii) relaxation and surgical access, (iii) problems of resuscitation. Vomiting was the most important, and whether aspiration occurred was the important point in vomiting. The term "vomiting" included the insidious welling-up of intestinal fluid which characteristically occurred under thiopentone anaesthesia. If vomiting occurred, the patient's head should be immediately lowered and the pharynx sucked out. If oxygenation was in doubt, the trachea should be aspirated and intubation carried out. If there was still evidence of obstruction in the lower part of the bronchial tree, bronchoscopic drainage must be considered. Whether bronchoscopic

drainage would really do good depended on the bronchial reflexes at the time of aspiration. If they "held up" the aspirate in the bronchi, excellent results would follow adequate drainage; but if the aspirate had permeated to the alveoli, bronchoscopic drainage would not achieve much. That alveolar type of obstruction was very lethal. Its presence could be determined by auscultation of the lung fields. Should circulatory standstill occur, the surgeon must proceed immediately to cardiac massage.

Dr. Shea went on to say that there seemed little need for regional analgesia except in odd special cases. Most anaesthetists preferred general anaesthesia with a cuffed endotracheal tube. The actual anaesthetic technique was a matter of individual preference, and a good case could be made out for simple methods such as the "open" administration of ether (at least for intubation).

Discussing resuscitation, Dr. Shea said that the need for it prior to and during anaesthesia depended upon (i) the length of the history, (ii) the site of the obstruction, (iii) whether gastro-intestinal aspiration was being performed. In practice the insertion of a gastric tube into the stomach and the intravenous administration of 5N saline with 4% dextrose solution was a good start. The amount of dehydration depended on the length of the history, the amount of vomiting or the quantity of aspirate obtained. Most patients had some degree of dehydration, if only from reduced intake. The higher the obstruction, the greater was the likelihood of gross electrolyte imbalance. In any case, once aspiration began there was a progressive tendency towards hypochloremia, hypokalaemia and alkalosis. Strangulation involved some loss of blood and serum, which might need replacement, at times urgently.

EMERY ROVENSTINE (United States of America) said that at the Bellevue Hospital cyclopropane was widely used. Spinal anaesthesia was not used.

MARGARET McCLELLAND (Victoria) said that she preferred quick induction of anaesthesia with cyclopropane, particularly for children.

RUTH MOLPHY (Queensland) emphasized the importance of giving pure oxygen to the patient for several minutes before using the rapid induction technique with "Pentothal" and "Scoline".

B. E. DWYER (New South Wales) emphasized the importance of adequately emptying the patient's stomach with a stomach tube of the widest bore available.

P. L. JOHNSON (New South Wales) said that spinal anaesthesia did not prevent inhalation of vomitus during the operation in the very ill patient lying supine, even though the patient was conscious.

MARY BURNELL (South Australia) emphasized the importance of leaving a tube in the stomach throughout the procedure.

Anaesthesia for Neurosurgery.

S. V. MARSHALL (New South Wales) read a paper on anaesthesia for neurosurgery. He said that that type of anaesthesia demanded special skill and judgement, since the margin for error was comparatively narrow. The basic essentials included adequate preparation of the patient, strictly moderate premedication, light narcosis with non-inflammable agents, proper lung ventilation and suitable posture to avoid cardio-respiratory embarrassment. The utility of induced hypotension was limited. Resuscitation must be adequate, and the anaesthetist must be allowed proper access to his patient throughout the operation. Spinal or epidural analgesia was suitable for many neurosurgical operations on the middle and lower parts of the spine. Thiopentone given intravenously was useful for much comparatively minor intracranial surgery in conjunction with a relaxing agent for induction of anaesthesia before intubation and as a strictly regulated adjuvant to other methods. Tracheal intubation was obligatory for most major intracranial operations, to ensure perfect control of the airway throughout. Tolerance of the endotracheal tube might be improved by topical analgesia, the

use of trichlorethylene and pethidine, and curarization. Curarization and moderate hyperventilation with nitrous oxide and oxygen, to prevent the slightest accumulation of carbon dioxide, was considered to be the best maintenance procedure. Owing to its dangers, induced hypotension had limited applicability, being reserved for cases in which hemorrhage might either prevent access or become uncontrollable.

EMERY ROVENSTINE (United States of America) agreed with Dr. Marshall that adequate respiration was most important and a perfect airway essential. Professor Rovenstine mentioned the recent introduction into anaesthesia in the United States of America of certain steroids, which he thought might be useful in neurosurgery, as they produced light narcosis but poor pain relief.

MARGARET McCLELLAND (Victoria) asked Dr. Marshall what technique he would use for neurosurgical procedures in children.

Another speaker asked Dr. Marshall whether he would use "Trilene" with carbon dioxide absorption.

Dr. Marshall, in reply to Dr. McClelland, said that he would use for children a similar technique to the one he had described for adults, in which controlled respiration was employed. In reply to the other speaker, Dr. Marshall said that he would not use "Trilene" in a closed circuit.

Anaesthesia in Obstetrics.

JANET M. C. BOWEN (New South Wales) presented a consideration of an anaesthetic routine for use in Caesarean section. She said that the keynote was adequate oxygenation of mother and foetus, and recommended the following routine. Half an hour before operation the patient was given one one-hundredth of a grain of atropine sulphate; suction apparatus, laryngoscope and intratracheal tubes, compatible blood and an oxytocic drug were ready at hand; catheterization, skin preparation and draping were carried out; then "Pentothal" (5% solution) in a dose of three to five cubic centimetres was given, followed by fifteen milligrammes of "Tubarine". Then 500 cubic centimetres of oxygen with 500 cubic centimetres of "Cyclopropane" were given; after a few minutes the "Cyclopropane" was reduced to 200 cubic centimetres, and then turned off as soon as possible. Just before the child was delivered all "Cyclopropane" was eliminated from the rebreathing bag and replaced by oxygen. After delivery

of the child "Ergometrine" or "Methergine" was given intravenously. In the remainder of the operation "Pentothal", "Cyclopropane" or nitrous oxide could be given.

Anaesthesia in Cardiac Surgery.

W. SHAW (New South Wales) read a paper on the management of anaesthesia for mitral valvotomy. He described briefly the abnormal state of the cardio-respiratory physiology in this condition, with the altered blood distribution, prolonged circulation and myocardial damage, and discussed its significance for the anaesthetist. Preparation for operation was stated to include the usual measures for thoracotomy, full digitalization and pre-medication with morphine and atropine with or without pentobarbital. The technical management of the actual anaesthesia was given in some detail, with special reference to its effects on the blood pressure and respiratory function. Emphasis was placed on the importance of an efficient airway and of abundant oxygen. It was pointed out that the patients tolerated only the lightest planes of anaesthesia and were very susceptible to "Pentothal". Relaxants were used to facilitate intubation and to produce apnoea. Reference was made to some of the complications liable to occur during operation, particularly embolism, massive hemorrhage, cardiac arrest and acute pulmonary oedema, as well as to the question of blood replacement.

EMERY ROVENSTINE (United States of America) said that he preferred to use barbiturates for pre-operative sedation, rather than opiates. He liked to use local anaesthesia for intubation. He thought that the blood loss should be measured by weight, and the amount lost replaced to within 85%. Large doses of barbiturates should be avoided. He liked cyclopropane.

MARGARET McCLELLAND (Victoria) asked Dr. Shaw how he succeeded in keeping the mediastinum still when using nitrous oxide alone.

S. V. MARSHALL (New South Wales) emphasized that thiopentone should be given very slowly and in small doses to patients with cardiac disease.

Dr. Shaw, in reply to Dr. McClelland, said that he had found nitrous oxide easy to use for very sick patients undergoing mitral valve operations. He had not found mediastinal movement troublesome, and had been able to control the patients' respiration adequately.

Section of Dermatology.¹

President: W. C. T. Upton, M.B., Ch.M., M.B., B.S. (*ad eundem gradum*), South Australia.

Vice-Presidents: W. K. Myers, M.B., B.S., M.R.C.P.E., New South Wales; W. W. Lempriere, D.S.O., E.D., M.B., B.S., Victoria; J. M. O'Donnell, M.B., Ch.M., Western Australia; B. B. Barrack, M.B., Ch.M., Queensland; Russell Thomas, M.B., Ch.B., M.R.C.P., New Zealand.

Honorary Secretary: Dr. M. Havyatt.

President's Address.

W. C. T. UPTON (South Australia) took as the title of his presidential address "Practical Dermatology". He said that the general outline of his paper followed from a quotation by Sir George Newman in *The Lancet* in 1931 on "What every patient wants". The patient asked: "What is the matter with me?" "Can you put me right?" "How did I get it?" "How can I avoid it in the future?"

¹The meetings held by the Section of Dermatology with the Section of Pathology, Bacteriology, Biochemistry and Forensic Medicine have been recorded.

Dr. Upton stressed the importance of diagnosis in skin diseases as the foundation of practical dermatology, and emphasized the following three factors in an examination of the skin: (i) good lighting, (ii) an inspection of the whole of the cutaneous surface when doubt existed, and (iii) a thorough knowledge of elementary skin diseases. He suggested a method whereby qualified clinical assistants could assist students and facilitate the more advanced teaching of the "honorarys". He urged general practitioners, when they were in doubt about a diagnosis, to seek expert advice whenever possible before undertaking treatment.

Discussing treatment and prognosis, Dr. Upton said that it was necessary to study the individual type of skin, and to assess the personality of the subject. He described common groups of skin diseases with reference to prognosis, and gave the following practical points in relation to treatment: (i) The cost of applications should be studied, and cheaper ones should be used if they were as effective. (ii) An attempt should be made to be familiar with the appearance and other features of "concoctions" prescribed. (iii) The practitioner should explain in definite terms how preparations were to be applied and removed.

Dr. Upton went on to discuss the actual treatment of extensive and stubborn eczema. He said that the causation was divided into three sections—predisposing factors, actual factors and unknown factors. He then indicated some practical points in the relationship of dermatology to general medicine, and made a protest against the indiscriminate sale of certain sedatives containing carbomyl by chemists and grocers. He finally referred to the prevention of skin diseases in a general way, with particular mention of solar radiation effects, ringworm of the scalp, and chemical dermatitis.

E. J. C. MOLESWORTH (New South Wales) opened the discussion. He said that the president had given to the meeting the wisdom gathered in a lifetime of dermatology, and that what he had said typified the man himself. He had told them not to discard the old and tried remedy for the latest sample in the desk drawer, and to treat the patient as a whole, not just the integument, lest the results be indicative of the dermatologist's approach. He had further said that potent remedies should be used with care, and Dr. Molesworth said that it was perhaps possible for him to endorse the remarks about cortisone. No dermatologist said that only dermatologists should use cortisone, but they would all say that cortisone should not be used in dermatology or indeed in any disease unless the doctor using it knew what to expect of it in the circumstances both good and bad. Its indications were, as Dr. Adrian Johnson had said, mostly in the deadly diseases, such as pemphigus, in which it was life-saving or death-deferring, and in acute and crippling but self-limiting disorders such as acute drug eruptions, when the cause had been eliminated. The signs of toxic effects should be determined by taking the blood pressure, testing the urine and weighing the patient at frequent intervals. Until the weapon was better known, its use should be confined to treatment of short-term dermatoses such as drug eruptions. Dr. Molesworth went on to say that recently in Sydney they had seen babies aged under one year given 75 milligrammes of cortisone a day for weeks at a time, for a dermatosis in which the attending practitioner had never made a diagnosis. Dr. Molesworth also referred to the account given by Dr. John Ingram of disasters following the use of antihistamines on eczematized surfaces.

Dr. Molesworth then discussed practical dermatology. He said that he would make two pleas. The first was that an assessment should be made, not only of the patient's skin, but of the patient; in fact, a diagnosis of the patient should be made, and the patient should be treated for that diagnosis and the treatment given a chance. In particular a little time should be spent telling the patient what to avoid; it did not matter what they put on the lesion, more important was what they kept off it. If complicated remedies were used, the side effects would be complicated—many of them remote in time and place. As an example, the use of arsenic except in desperate cases and for short periods would result in others having to treat many patients with skin carcinomata many years after the prescriber had gone to his reward. The second and last plea was that potent and irritating preparations should not be used on oozing surfaces. It was a trite bleat from dermatologists, but there was no doubt that "wet packs for wet rashes" would help patients more frequently than any other approach, irrespective of the diagnosis. If chlorpromazine was used, it was particularly needed when anxiety and agitation were superimposed on the dermatosis. Dr. Molesworth concluded by emphasizing the president's plea for a calm diagnostic approach to the whole patient, and for care to be taken lest by over-enthusiasm about a

new remedy, the patient was given something worse than the disease.

Eczema of the Hands.

N. S. WILKINS (Victoria) read a paper entitled "Clinical Features of Eczema of the Hands". He said that first an appropriate definition of eczema was needed; it was a superficial, non-infectious, inflammatory dermatosis, consisting of minute vesiculation within the epidermis. Its manifestations consisted of two or more of the following: redness, oedema, scaling, vesiculation, weeping, crusting, formation of papules, thickening, infiltration, lichenification and pigmentation, associated with itching. That definition must include contact dermatitis. In a specific site such as the hand, the predominantly vesicular nature of the eruption on the palms was due to the thickness of the skin. The hands were prone to eczema because they were constantly exposed to irritants and potential allergens, and were very accessible to scratching.

Dr. Wilkins emphasized that the skin generally must always be examined, otherwise such conditions as *erythema multiforme*, psoriasis and *lupus erythematosus* might be wrongly diagnosed. Morphologically, the acute eczemas were usually due to primary irritants, allergens or micro-organisms, and less frequently to endogenous agents. They could often be detected by making patch tests. Chronic eczemas were chiefly due to endogenous agents, and examinations for tinea elsewhere and investigation of occupational sources of agents were necessary. In diskoid eczema there was an inherent constitutional tendency; atopic eczema was rarely confined to the hands.

W. W. LEMPRIERE (Victoria) discussed aetiological aspects of eczema of the hands. He said that from a legacy of confusion, numerous definitions and theories of eczema had drawn attention to various morphological and clinical aspects of the problem. Recognition of a common "eczema reaction" in response to a wide variety of predisposing and precipitating factors had led him to summarize the factors in two main groups—endogenous and exogenous. Some features of the aetiological factors were discussed.

In the first group the endogenous factors included the following: (i) Structural peculiarities of the skin—(a) xeroderma, predisposing to intertrigo and infection, (b) the "seborrhoeic diathesis", (c) Besnier's prurigo. (ii) The pharmacological action of drugs, such as iodides, arsenic or phenolphthalein, taken internally. (iii) Allergic reactions to food or drugs, such as strawberries or streptomycin. (iv) Metabolic factors—(a) diet and digestion (gouty eczema), (b) fermentation (intestinal flora), (c) vitamin deficiencies, (d) faulty assimilation, malnutrition. (v) Toxic states—diseases of the liver or pancreas, and blood diseases such as leuchemia or reticuloses. (vi) Toxic absorption in vascular stasis—varicose dermatitis with associated eruption on the hands. (vii) Psychosomatic disorders with irritation as the prominent feature—neurodermatitis (local or general), neurovascular cutaneous hypersensitivity, the results of mental reactions to exogenous disorders. (viii) The "allergic diathesis"—the inherited disposition of sensitivity, cutaneous, respiratory or gastro-intestinal. (ix) Functional considerations—(a) the special skin of the palms and fingers, (b) the effects of sweating (cheiropompholyx, dyshidrotic eczema).

In the second group, exogenous factors, were the following: (i) Physical trauma—heat, cold, light, radiation, mechanical trauma, friction, lichenification, evaporation, washing (which removed natural protection). (ii) Chemical trauma by primary irritants, damaging the epidermis—*dermatitis venenata* (domestic or industrial), mild or severe, acute or chronic, organic or inorganic, solid, liquid or gas, animal, vegetable or mineral factors; *dermatitis medicamentosa* (local application). (iii) Allergic responses to the above—inherent or acquired sensitivity, for example, to sulphonamides on the skin. (iv) *Dermatitis artefacta*.

Dr. Lemprière said that the following infective states might complicate any of the factors already mentioned: (i) secondary bacterial infection of existing lesions, (ii) smouldering bacterial infection as the predominant factor.

(iii) acute pyogenic dermatitis, with absorption of waste products, causing a remote id eruption, (iv) mycotic dermatitis, which might be associated with dyshidrotic eczema, (v) monilial infection—for example, of the webs of the fingers, (vi) parasitic conditions, such as eczematized scabies, in which three factors might be concerned—the parasite, friction and secondary infection.

The following other conditions simulating eczema were listed by Dr. Lempriere: *lichen planus* versus "lichenification", psoriasis of the palms, associated with infection, *acrodermatitis perstans*, keratoderma of the palms and soles.

I. O. STAHL (Victoria) read a paper entitled "Treatment of Eczema of the Hands". He suggested that, in view of the general ignorance concerning many of the underlying mechanisms responsible for producing and maintaining hand eczema, Hippocrates's axiom that "the patient should be treated rather than the disease" should be more widely followed. Dr. Stahl said that that approach, which was calculated to gain the full cooperation of the patient, was a great help in instituting treatments based on physiological principles; it demanded an assessment of the life situation of the patient and of his ability and availability to cooperate. That ability was intimately related to the patient's intelligence and personality type; provided that adequate rapport was established and that the patient was supplied with a clear perspective of his disease in relation to the financial, psychological or social incapacity it caused, he would usually modify his activities and outlook sufficiently to cooperate in a successful treatment schedule.

Abrasive Treatment of Depressed Scars and Other Cutaneous Blemishes.

JOHN C. BELISARIO, assisted by M. T. HAVYATT (New South Wales), presented a paper and film on the abrasive treatment of depressed scars and other cutaneous blemishes by the revolving steel-wire brush technique. A number of methods of mechanical, chemical and refrigeration removal of scars and pigmentary and vascular blemishes of the skin were enumerated, such as acupuncture, scarification, electrodesiccation, surgical excision or shaving, the application of chemical caustics and freezing agents, and abrasion. It was pointed out that Kromayer in 1905 had first adapted dental appliances in the form of cylindrical knives, rasps and burrs, rotated by a dental motor, for dermatological cosmetic surgery. Freckles, lentigines, pigmentations and warts had been removed by these instruments, with and without ethyl chloride freezing. Kromayer first described a "levelling operation" for pitted (small-pox) scars, which consisted of abrading the intervening skin with a rasp or burr, down to the level of the floor of the scars. He found that abrasion limited in depth to the *cutis vasculosa* would heal without scarring. That finding had since been confirmed by others, including Dr. Belisario. Hand-powered bristle and wire brushes, sandpaper and motor-powered grinding disks had since been used by others. The use of a revolving steel-wire brush had been introduced by Kurtin of New York in 1952, and had been found to be the most useful and efficient procedure of all for the removal of scars and other skin blemishes.

Dr. Belisario said that he had successfully employed variously shaped dental rasps and burrs for the removal of skin blemishes. For over two years, mostly assisted by Dr. M. T. Havyatt, he had used the revolving steel-wire brush for the removal of acne scars, dermal pits from trauma, herpes zoster or varicella, traumatic tattoos and various pigmentary discolorations. The results more than justified the difficulties encountered in learning to use the apparatus, a "Kurtin Plastic Planer" (Robins Instrument Company, New York), which was a dental machine with a motor of one-twelfth horsepower producing 12,000 revolutions of the brush per minute.

The routine of treatment was outlined, including the various pitfalls encountered. Ethyl chloride was used to freeze the areas to be treated, so that the skin was hard and planed like a board while it was being levelled to the base of the pitted scars. The patient felt no discomfort at

the operation, prior to which 50 milligrammes of pethidine were given hypodermically.

Dr. Belisario indicated the advantages and improved results of this method over the use of sandpaper and other scar-removal techniques. He said that results rarely gave more than 50% to 80% of improvement. However, the patients were always most grateful for any improvement obtained, and inferiority complexes due to scarring were greatly lessened or eliminated. It had been noted that treated areas continued to improve with time. The treatment was still under trial for a number of dermatological conditions such as intraepidermal carcinomata, hypertrophic scars, keloids (in conjunction with irradiation), chloasma, *xeroderma pigmentosum* and small patches of diskoid lupus erythematosus.

Pruritus.

J. J. W. FLYNN (New South Wales), in a paper on "Pruritus—Local and General", said that the term pruritus applied properly to itching which was not accompanied by obvious changes in or disease of the skin other than changes provoked by rubbing and/or scratching. However, it was also used loosely to denote itching even in the presence of primary cutaneous changes. It was excited in everyone by some forms of irritation, but the intensity of the subjective phenomena varied a great deal in different people. Mild degrees of pruritus were physiological. It became pathological (i) when it was brought about by non-physiological stimuli and (ii) when its intensity was so great that it led to disturbance of conduct or sleep.

Dr. Flynn listed the following general diseases associated with pruritus (generalized): (i) infections—for example, acute exanthemata; (ii) metabolic disorders—*diabetes mellitus*, gout; (iii) hepatic disease, with and without jaundice; (iv) endocrine disorders—hypothyroidism and hyperthyroidism, pregnancy; (v) hematopoietic and reticulo-endothelial disorders—leuchæmia, Hodgkin's disease, *mycosis fungoides*; (vi) neoplasm—internal malignant disease, including cerebral tumours; (vii) renal disorders—uræmia; (viii) drug intolerance—bismuth, gold, arsenic, morphine, barbiturates, phenolphthalein, cocaine; (ix) psychological causes, particularly affecting the palms, soles, scalp, ano-genital region, axillæ and breasts. Treatment involved removal of the cause, if possible, and symptomatic alleviation of the itching. Topical applications were of value in many cases.

Dr. Flynn then made particular reference to *pruritus vulvæ* and *pruritus ani*. He divided the causes of *pruritus vulvæ* into two groups, local and general. The most common local causes were (a) local irritants or sensitizers, (b) parasites and infections, (c) diseases of the genito-urinary tract and (d) local skin disease. Among general causes were (a) *diabetes mellitus*, (b) neurogenic factors and habit, (c) endocrine disturbances (the menopause, pregnancy) and (d) a wide range of conditions, including icterus, diseases of the reticulo-endothelial system, senility, gout and chronic nephritis. Treatment was best approached by seeking to find the cause so as to correct it. Local applications, X-ray therapy, which was particularly useful in long-standing cases, and certain specific measures were required according to the individual case. Psychological treatment was often necessary. Enthusiasm for hormone therapy seemed to be waning. Surgical measures involving the cutting of sensory nerves and the injection of local anaesthetics were products of inefficiency and despair.

Discussing the aetiology of *pruritus ani*, Dr. Flynn said that the more important general diseases had been mentioned previously. Local conditions to be considered were: (a) external contacts—primary irritants, such as woollen garments, and sensitizers, such as contraceptives and deodorants; (b) hygiene—lack of cleanliness and excessive washing; (c) parasites; (d) local infections—bacterial and fungal; (e) local skin disease. Treatment included removal of the cause, psychological care and local measures. Hydrocortisone ointment was still on trial, but in many cases its effect was almost miraculous. X-ray therapy was, in Dr. Flynn's experience, the most valuable of all remedies. He considered that antihistamines and local anaesthetics had no place in the treatment of *pruritus ani*.

Section of History of Medicine.

President: C. Craig, C.M.G., M.D., M.S., F.R.A.C.S., Tasmania.

Vice-Presidents: Professor H. J. Wilkinson, B.A., M.D., Ch.M., Queensland; K. S. M. Brown, M.B., Ch.M., New South Wales; O. R. Corr, M.B., B.S., Western Australia; K. M. Bowden, M.B., M.S., Victoria.

Honorary Secretary: Dr. A. M. McIntosh.

President's Address.

C. CRAIG (Tasmania), in his president's address, said that he wished to congratulate all those present on their interest in medical history. There was probably no other hobby that was at once so interesting and so useful. It was not possible to make any sort of research into medical history without discovering something that was of value either to clinical medicine or to medical politics. Australians had been very active in the field of medical history during the past fifty years, and many had been surprised at the list of articles on the subject recently published by *THE MEDICAL JOURNAL OF AUSTRALIA*. This activity had continued up to the present time, and it was probably correct to say that it was more intense now than at any previous period. Dr. Craig said that it would be invidious to mention names, but he knew that all were congratulating themselves on the fact that Professor Edward Ford was preparing a bibliography of medical works of Australian interest. Such a bibliography was essential to historical research, and everyone would benefit by its production. Its appearance would form a landmark.

Dr. Craig went on to impress on all historians a cardinal point—that all historical research should be carried out with a view to publication. He said that there was, of course, a great deal of personal satisfaction to be gained from such research, but it was not enough to be content with this. The medical historian always owed a duty to his colleagues, and to medicine as a whole. In addition, quite apart from his normal work, the historian had certain other duties. Those who were members of committees, boards and similar bodies should constitute themselves the guardians of the records of those bodies. They should always be alert to prevent valuable losses. Sometimes a minute book was in use for years; and if it was lost, the records of all those years were lost with it. Those who sat on the committees of medical libraries should carefully inquire into the valuable holdings of such libraries and should insist that they be listed and kept under lock and key. It was well known that many valuable books of the greatest historical interest had been placed on the open shelves of Australian medical libraries and had disappeared. In conclusion, Dr. Craig stressed the fact that medical historians should concern themselves with the medical history of their own times. He said that a most impressive address had recently been given to the section of medical history of the Victorian Branch of the British Medical Association by Dr. Roseby on certain aspects of lodge work. Dr. Roseby had played a big part in the negotiations with the lodges, and his paper was a valuable contribution to medico-political history.

Underwood's Antidote for Snake Bite.

W. E. L. H. CROWTHER (Tasmania) read a paper entitled "Mr. Charles Underwood and his Antidote for the Bites of Snakes and Other Venomous Reptiles, with Some Observations on Snake Bite in Tasmania". He said that the opportunity of examining what might be the last remaining phial of "Underwood's Antidote for the Bites of Snakes and Other Venomous Reptiles", plus a lifelong association

with the country district from which Underwood came, had occasioned the present casual excursion. The small bottle itself, apart from much intrinsic and scientific interest, had the following historical association. It had been carried by Mr. Charles Gould, government geologist and surveyor, in his long expeditions through the partially unexplored interior of Tasmania, in the middle decades of the nineteenth century. Gould himself was the son of John Gould, the great ornithologist, who came with his wife Elizabeth to Van Diemen's Land in September, 1838, and spent several months collecting birds and eggs and observing their habits. Years later, Gould published his "Birds of Australia" in eight large folio volumes with coloured plates, still the outstanding authority on its subject.

Some information about Charles Underwood and his methods came from the writings of the late Alexander Hume, editor and local historian, in the columns of his paper *The Critic*. From that source it appeared that Underwood was not alone in claiming to possess such a remedy; the names of Shires and Vimpany were mentioned, with that of Luccock, a Victorian. There was much rivalry and personal feeling between those "practitioners", and they were in the habit of displaying their snakes and offering their wares to gatherings at public houses and country inns. The reptiles were handled freely by their principals, who allowed themselves to be bitten and thus demonstrated in a practical manner the merits of their own antidotes. Fowls, cats and dogs were also subjected to the same treatment. Hume had given a vivid account of such a meeting between Underwood and Shires at Launceston, which, however, did not show any essential superiority between the two "cures". Similar trials were carried out between the two rivals at Melbourne, in the presence of representatives of the medical profession of that city. *The Argus* of November 6 and 12, 1861, reported their findings as inconclusive and stated that the antidotes should be regarded as inert. Dr. Crowther said that the basis of the inventors' claims was that an iguana, after having been bitten in an encounter with a snake, had been followed and seen to take and eat leaves from a low shrub, and so nullify the effects of the bite. It was from an extract of such leaves that the antidote was believed to have been prepared.

Dr. Crowther went on to say that from such an introduction it was natural to seek for the views held by the early members of the medical profession in Van Diemen's Land on snakes and their venom—at that time a major hazard in the young Colony. While an occasional mention in the Press might be found, two articles were of absorbing interest. Both were by men who played a large and important part in the scientific development of the community. J. W. Agnew, M.D., published in the *Tasmanian Journal of Natural Science* for 1846 a long paper entitled "Notes on the Teeth and Poison Apparatus of the Snakes of Tasman's Peninsula" (the reptiles of that locality were, of course, common to the remainder of the Colony). In that paper he described the anatomy and function of the bones and teeth of the lower jaw, the fangs and the palate, and the poison glands and ducts. The whole article gave evidence of most careful dissection and observation as well as detailed anatomical knowledge. In it Agnew urged the

¹ The meeting held by the Section of History of Medicine with the Section of Naval, Military and Air Force Medicine and Surgery has been recorded.

necessity of a full and close study of the reptiles, their habits and distribution, and the intensity of their venom. In later life he was closely associated with practical demonstrations of so-called antidotes and their efficacy.

In *The Australian Medical Journal* of April, 1859, appeared a communication entitled "On Snake Bites", from Dr. E. Swarbrick Hall, of Hobart Town. It was of exceptional interest and revealed the high integrity and personal qualities of perhaps the noblest figure in the whole professional life of the Colony. Dr. Hall opened with a long description of the last days of George Henwood, a watchmaker by trade, who itinerated the country to repair clocks and watches, and who as well exhibited snakes and vended Underwood's antidote. The incidents culminating with the fatal snake bite were described, with the subsequent treatment there and at His Majesty's General Hospital and the findings at the autopsy. Then followed a review of five cases treated by his colleague Dr. John Doughty, of Oatlands, after which Hall passed on to describe his own experiences as an assistant colonial surgeon in various country districts of Van Diemen's Land. He had been called on to treat three persons, one of whom, a shepherd boy, died before medical aid arrived. Perhaps the most important section of the paper contained Dr. Hall's general remarks on Tasmanian snakes, with observations on their habits, including the prowess of a retriever dog brought by him from England which was a "most inveterate snake hunter and enabled me to slay great numbers of them". During that period also he collected live snakes, destroyed them with nicotine from his old pipe and sent a large variety to the Chatham Military Museum.

Dr. Crowther said that it was no surprise to find that two sister colonies had their antidote, if not an Underwood. Dr. J. Berncastle in 1868-1869 published at Melbourne two pamphlets, both concerned with snake bite and its cure. In one the author was more than flattering to himself in his treatment of this emergency and the results achieved. The earlier of the two had for good measure an addendum on the use and abuse of tobacco, and was read before the Royal Society of New South Wales in November, 1857. The second, a lecture to the Victorian Medical Association, was couched in very different terms. In the earlier publication Berncastle gave his ideal treatment under eight headings. To the conventional local measures he added full use of spirits, such as a pint of brandy, by the wine-glassful every quarter of an hour. Indeed, he went so far as to say that a quart bottle of spirits would cure an adult in those circumstances, rather than produce intoxication. His final exhortation was "Quickness in action, the Golden Rule in all cases". The old argument about the value of Underwood's remedy found its way from time to time into the Tasmanian Press, especially in 1881, after Underwood's death following a bite from a snake. Dr. Grey Thompson, of Launceston, then stated categorically that his death was not due to the snake, as it had no fangs and was innocuous; the actual cause was heat apoplexy, Underwood having had a similar attack some weeks prior to his death.

In conclusion, Dr. Crowther said that the "goanna" theme recurred constantly in the references to the antidote, and it seemed clear that the country folk who bought and used the remedy did so in the belief that Underwood had actually witnessed the encounter between the snake and iguana and its aftermath. The legend spread through Tasmania, Victoria, and New South Wales, and was commemorated by "Banjo" Paterson in his ballad of "Johnson's Antidote". Dr. Crowther, whose family had had a country home in Underwood's country district for almost a century, had found as recently as February of the present year that the legend was still current. In fact it had passed into folk lore.

Quaker Physicians and Nonconformity.

K. MACARTHUR BROWN (New South Wales) read a paper on the subject of Quaker physicians and nonconformity. He referred first to the efforts made by Arabian physicians and scholars during the Middle Ages to reconcile knowledge and belief, and the advantage afforded to them by ready

access to the ancient literature of Greece and Rome. At a later period the fortunate position of western Europe in the unity of Church and State derived from a common religion and the universal language, Latin. Dr. Brown went on to discuss the seeds of dissent, which he said were the scholarship of Pietro d'Abano in Italy and of John Wycliff in England, the need for rationalization of inconsistencies in spiritual and material philosophies, the translation of the Scriptures into the mother tongue, new discoveries in the material world at the Renaissance, and the clash of ideologies during the sixteenth century. He referred to the beginning of sectarian issues in the reign of Elizabeth I, and the struggle for political power in Church and State and the various Acts of Parliament to discourage nonconformity. Calvinistic creeds and scriptural authority were the only law recognized by Puritans and other Protestant sects in the seventeenth century, and a new and peculiar sect, the Quakers, arose in 1650.

Dr. Brown discussed the earlier aggressive tactics of the Quakers, their religious beliefs and rules of conduct, the persecution of nonconformists with the Restoration (1660) and the introduction of new legislation to control their religious and political activities. The dissenting bodies continued to grow and increase in power, and were augmented later by the Methodists and Unitarians.

Nonconformists were under disabilities in regard to secondary and higher education; they were excluded from the Universities of Oxford and Cambridge and from holding public or civic office. Their own system of education tended to the new studies of science, modern languages and history. The Quaker upbringing was conducive to the making of good doctors and useful citizens. Dr. Brown gave sidelights on some of the outstanding Quaker physicians to illustrate their peculiar disabilities and difficulties in higher education and hospital training, in having to go outside England for university degrees, and in being denied the privileges of full status in the Royal College of Physicians of London. The Society of Licentiate Physicians was formed in London in 1764 to represent their case and to have their grievances remedied. Dr. Brown made short references to John Fothergill, Thomas Dimsdale, J. C. Lettsom, Thomas Young and Thomas Hodgkin.

Discussing the University of London, he said that the growing power and influence of the nonconformist bodies led to their efforts to overcome religious tests by establishing a teaching centre of their own in London. University College was founded in 1824, and government support with full recognition was given in 1836. The whole scheme was obviously successful, and good examples were set to the older educational institutions of England. The passing of the *Medical Act* of 1858, and the ultimate abolition of all religious and political discriminations against nonconformists took place in 1871.

The Honourable David Elliot Wilkie, M.D.: A Pioneer of Melbourne.

H. BOYD GRAHAM (Victoria) read a paper on the Honourable David Wilkie, M.D. He said that David Elliot Wilkie (1815 to 1885) graduated at Edinburgh in 1836 and went to Melbourne early in 1839. He practised there as a physician until his retirement in 1881. He had long and prominent associations with the Melbourne Athenaeum from its inception in 1839, with the leading Presbyterian Church from its origin in 1841, with the Royal Society and its antecedents from 1854 onwards, and with the series of medical organizations from the formation of the Port Phillip Medical Association in 1846. He was closely associated with the editorial work for the first medical periodical journal, and was sole editor for a time. In the Legislative Council for ten years from 1858, he became an executive councillor and chairman of committees. He took a great interest in the provision of the water supply and sanitary requirements for the rapidly growing city. The chief disappointment of his notable career was the unhappy ending of the Burke and Wills expedition; he was a leading member and honorary treasurer of the exploration committee.

Dr. Wilkie married a daughter of James Clow, the founder of Presbyterianism in the Colony. They had five sons and five daughters.

Nicolaus Copernicus.

ALEXANDER RYTEL (United States of America) read a paper on "Nicolaus Copernicus". He said that towards the close of the Dark Ages and the commencement of the Renaissance there arose a new outlook upon the world in all the fields of science, including preventive medicine, hygiene, and medical practice. At the very opening of that new chapter in the history of mankind, Nicolaus Copernicus was born on February 19 in the year 1473, in Torun, Poland. His first studies were carried on in his native Torun, and he later studied at the cathedral school in Wloclawek and at the Academy in Kracow. In 1496 he went to Bologna, where in addition to the law, he studied mathematics, astronomy and Greek, receiving the bachelor's degree.

In 1500, when Copernicus was engaged in the discussion of mathematico-astronomical problems at Sapienza in Rome, he became interested in the monuments and constructions of ancient Rome: the old bridges (Fabian's), the roads (Appian), the aqueducts and the sewers. Two of the aqueducts, those of Virgo and Trajan, constructed between 312 B.C. and A.D. 109, were being considered by the city officials as to whether they should be renovated and were finally put into use in 1570. The drainage sewers (*cloaca maxima*, near the Palatine bridge) had been in use for over nineteen centuries. That stay in Rome and interest in its ancient works asserted itself later, when Copernicus constructed water works in the cities in Warmia.

From 1501 to 1504 Copernicus studied medicine at Padua, as it was the practice of the times that astronomers worked for a doctorate in medicine, since it was believed that the stars played an important role in health and disease.

After fifteen years of university studies Copernicus returned to Poland, there to continue his scientific work to the end of his life, to serve his fellow citizens with wise counsel in the sphere of politics and economic development, and bringing medical help to all who appealed to him—and that, according to Gassendi, free to the poor. The frequent augmentations and annotations of new prescriptions carried on to the end of his life, as well as recommendations made in 1527 on the writing of short prescriptions, bore proof that Copernicus was aware that the medications at the disposal of the medical science of his days were not always reliable, but at times disappointing despite all effort. As an example might be cited his brother Andrew's sickness, diagnosed by his contemporaries as leprosy. Leprosy had ravaged the Baltic coast since the thirteenth century, and the only preventive was the isolation of the sick in the so-called Hospitals of Saint Gregory, located outside the city walls. Other diseases which frequently visited Pomerania, Prussia and Poland were influenza, scurvy, typhus fever—*morbus Hungaricus*—and even Black Death.

Soon after the return of Copernicus to the country a hospital to fight the diseases was organized at Frauenburg and was staffed by the Brothers of the Order of Saint Anthony. Copernicus's signature figures prominently on the document of 1506 assigning the hospital to the administration of Saint Anthony's Order.

By the explicit wish of Bishop Watzelrode, Copernicus was delegated by the chapter to the castle of Heilsberg, where he remained till 1512. Amongst his duties was the supervision of the health of the bishop and his immediate associates as well as of the numerous staff of the castle. In that manner Copernicus became the first guardian of the health of a large settlement.

In 1516 Copernicus became the administrator of the chapter's possessions in Warmia, with the seat at Allenstein Castle. He was responsible for the management of mills, bakeries, ponds, forests, and flocks of sheep, goats and stock. The distribution of fuel and milk to the

inhabitants impoverished by long wars waged against the incursions of the Teutonic order was under his jurisdiction. When a plague again broke out in 1519 Bishop Fabian von Lossainen turned to Copernicus, as his public health officer, to prepare a set of directions to combat and prevent the spread of contagious diseases. Isolation was the fundamental factor in the directions, requiring the removal from towns during the plague of all those who had had contact with the stricken. Priests were restricted in the performance of their ecclesiastical duties to prevent exposure and cross-infection. During sickness, rest and cessation of work were recommended. After a temporary abatement of the pestilence in 1520 a new series of wars was precipitated in Warmia. Famine and poverty began to oppress the survivors, and a new epidemic broke out. During that critical period Copernicus was nominated governor of the whole of Warmia in 1523, and to him was entrusted the reestablishment of order and the suppression of the epidemic.

In order to provide food for the impoverished populace and save them from famine, Copernicus, after a very careful study of the costs of baking and of the grain, stipulated a just price for bread ("*panis coquendi ratio Nicolai Copernici*"). Next, on the order of the king, a just price for other foodstuffs was established.

Among the activities that Nicolaus Copernicus carried on during his life-time in the conservation and protection of health, which could be considered as the beginning of public health programmes, should be mentioned his services in securing a water supply for Frauenburg, his permanent residence, and for the other cities of Warmia.

The last project that the chapter of Frauenburg assigned to Copernicus and his friend Giese in 1535 was the control of the condition of the buildings, the state of the cemeteries, and the activities of the churches—the maintenance of records of baptisms, marriages and burials in the district of Olsztyn. Those duties of Dr. Copernicus enabled the chapter to evaluate the increase of the population, the birth rate and the state of health from the records of deaths, and thus the records constituted something of the nature of vital statistics.

J. W. JOHNSTONE (Victoria) said that he had dropped in to the lecture on medical history while looking for his own section. He felt like Saul, seeking his asses in the wilderness. He had found something of even greater value—namely, that Copernicus not only changed the course of thinking by his contributions to astronomy, but was a physician of outstanding merit in several fields. It seemed that in the matter of conveyance of infection and in the idea of washing the hands he preceded Semmelweis, of Vienna, and Oliver Wendell Holmes in America in regard to the transmission of puerperal sepsis. Dr. Johnstone went on to say that Copernicus was the first of three great medical men who made mankind change its views of itself in relationship to its environment. The relegation of the known world to a mere speck in the celestial universe could not be easily accepted by the mediæval church. The same opposition was met by Darwin in assigning man to his place in the biological stream of life. Freud, in his lectures on psychoanalysis, mentioned the opposition to his two predecessors. He anticipated the same difficulty in the acceptance of his ideas of mental dynamics when man's mind was turned inwards on himself and he realized that he was not even master in his own house. Another and fourth figure of the present times, but not medical, was Einstein, whose ideas on relativity, space, gravity and the equation of matter with energy demanded a new way of thinking. It was a pleasure to share the interest which Dr. Rytel had in a great physician whose influence spread far beyond his field.

Dr. Edith Pechey: One of the First Woman Doctors.

S. DEVENISH MEARES (New South Wales) read a paper on Dr. Edith Pechey. He said that Edith Pechey (1846 to 1908) was one of the first few women to be registered as a doctor in Britain, taking one of the foremost parts in the struggle of the "Seven against Edinburgh". By her ability and happy personality she helped to smooth the way for

other women trying to enter the medical profession. During the course, although she won a scholarship, it was withheld because she was a woman. She was a member of the provisional council which founded the London Medical School for Women in 1874. As the Royal Colleges in London and Edinburgh had refused to admit women to examination, Edith Pechey with Miss Shove went to Ireland in 1876 and persuaded the King's and Queen's College of Physicians of Ireland to allow the women who had trained in Edinburgh to sit for the final qualifying examination. Edith Pechey passed the examination in 1876, and in the same year obtained the degree of doctor of medicine of Berne University. After working as house surgeon under Lawson Tait, she was appointed to take charge of a hospital at Bombay. The Indian Government later availed itself of her services, and she did much to raise the standard of nursing in India. A young Indian girl, Rukmabai of Rajkot, assisted by Dr. Pechey, took the unprecedented step of going to Britain to study medicine, completing the course there. In 1890 Dr. Pechey gave an address on the evils of child marriage; it was publicized widely and did much to alter the law in India. She was appointed to the Senate of Bombay University. Edith Pechey was an able speaker and a notable suffragette, attending the Congress of the International Alliance of Suffragettes at Copenhagen in 1906. Her work in India sapped her strength and she died in 1908. Throughout her life she had many links with Australia.

Surgery in New South Wales in the 1830's.

A. M. McINTOSH (New South Wales) read a paper on "Surgery in New South Wales in the 1830's". He said that ligation of the innominate artery for subclavian aneurysm had been first reported by Valentine Mott, of New York. He was unsuccessful, as were all others until A. W. Smyth, of New Orleans, succeeded in 1864. William Bland in Sydney performed that operation twice, once in 1832, as reported in *The Lancet* of September 29, 1832, on a convict, William Mullen, who died, and again in 1837, when his operation gave rise to much criticism. The *Sydney Gazette* of 1837 reported that operation as something without precedent in the Colony, and stated that it required five and a half hours for its performance. The next issue of the same journal announced that the patient had died and that his wife alleged that his medical attendant, who had accompanied him to Sydney from Maitland, had been given £20 to arrange the necessary treatment and to secure accommodation for him pending his operation, but that the patient had been admitted at once to the Benevolent Asylum and the doctor had retained the money. The next reference to the operation was in *The Colonist* of March 14, 1838, in which "Investigator"

referred to the previous report, and suggested that if the operation occupied five and a half hours an explanation was due "to science, to humanity and to society". He also quoted the details of the operation abstracted from Liston's "Surgery", and an account of a similar operation performed by Dr. Lizors in Edinburgh, which occupied fifteen minutes.

The editor of *The Colonist* thought the matter of sufficient importance to devote a column and a half to it. He referred to "blunders and mismanagement", to "a fellow creature lying for 5½ hours in excruciating but lingering agony beneath the butchering knife of an unskilful but presumptuous operator". He demanded the appointment of a medical board to exercise disciplinary control over doctors in cases of culpability or dereliction of duty, spoke of "questionable and disreputable characters preying on the vitals of society", and so on.

That was followed by a very dignified letter signed by George Bennett, Charles Nicholson and F. L. Wallace. They pointed out that the operation was most difficult and had in fact never been successfully performed; that no alternative treatment was of any avail; that the operation was decided on only after mature deliberation and candid discussion with the patient; that some surgeons had as a public exhibition performed the operation in a very short time; that the patient of Dr. Lizors, to whom reference had been made, died some days after operation; that Dr. Bland had exhibited the utmost skill, and that it was a poor reward for his gratuitous service to the Benevolent Asylum if statements from an obscure and incompetent rival were produced to impugn his professional conduct or character. The editor, in reply, denied prejudice, animus or malice. He had been only three months in the Colony and knew nothing about the medical officers concerned. He declined to modify his comment. Bland next wrote to *The Colonist*, pointing out how formidable the operation was; however, it was, in certain circumstances, including the present instance, completely justified. He described the difficulties of the operation and the findings both then and *post mortem*, from which it appears that the operation could not possibly have succeeded. The patient was not unduly distressed by the long operation, had immediate post-operative relief, and died from causes over which the surgeon could have no possible control, and for which no blame could attach.

Finally, the editor made an "amende honorable", admitting that "so candid a communication from Dr. Bland instead of blanching the fresh luxuriance of his laurels will afford a memorable proof of the adventurous skill and undaunted perseverance of an undoubtedly eminent and meritorious surgeon".

Section of Medicine and Experimental Medicine.¹

President: W. W. S. Johnston, C.B.E., D.S.O., M.C., E.D., M.D., B.S., F.R.A.C.P., Victoria.

Vice-Presidents: O. E. J. Murphy, M.B., Ch.M., F.R.C.P., F.R.A.C.P., Queensland; W. Evans, M.B., F.R.C.P., F.R.A.C.P., New South Wales; P. Dorney, M.D., B.S., M.R.A.C.P., Tasmania; Professor H. N. Robson, M.B., Ch.B., F.R.C.P.E., F.R.A.C.P., South Australia.

Honorary Secretary: Dr. K. S. Harrison.

President's Address.

W. W. S. JOHNSTON (Victoria) took as the subject of his presidential address "The Physician and His Education". He said that by the term "physician" he meant not only the medical consultant or teacher, but also the worker

in the fields developed within recent years which he would elaborate later.

There were several methods by which, after graduation, the would-be physician might proceed towards his objective. One was the approach through general practice—a way beset with difficulties, but showing brilliant examples such as Dr. William Pickles, who had achieved fame by his studies in problems of infectious disease in an area of rural England. Another, and indeed the accepted, method was the step-by-step gradation through various positions

¹ The meetings held by the Section of Medicine and Experimental Medicine with the Section of Surgery, the Section of Pediatrics, the Section of Pathology, Bacteriology, Biochemistry and Forensic Medicine, the Section of Anaesthesia, and the Section of Obstetrics and Gynecology have already been recorded.

on the medical side of a teaching hospital. The criticism directed against that procedure was that the experience gained was within the circumscribed field of hospital practice, and thus remote from conditions as they usually existed outside. Still another process was exemplified by the physician in charge of clinical research—a product of comparatively recent times. His role in relation to research on the one hand and to clinical medicine on the other was a most responsible one. Dr. Johnston said that it might be possible to combine some of those methods with advantage, and with that in view he referred to some remarks of Professor Melville Arnott, at a conference on medical education held in London two years earlier. Professor Arnott had mentioned the criticism that the teaching of clinical medicine was too much in the hands of specialists. Their training fitted them for that; but they should be specialists in scholarship and scientific methods. When "family doctors" became accustomed to work closely together and were thus subject to the constant criticism of their peers, they should be able to produce medical teachers as good as, probably better than, any to be found at present. There was evidence that developments were moving in that direction with the rapid growth of group practice. The physician should be the central figure in the group, making decisions in regard to the type of investigation required and the specialist opinion, if any, to be sought.

Dr. Johnston finally instanced such great physicians as Osler, Mackenzie, Spence and Stawell, and emphasized the difficulties of assessing the influence in such cases of educational methods. He asked whether their attributes were not an essential part of their character, and said that in that matter there was continuous argument between the advocates of the classical approach on the one hand, and on the other the scientific approach. It would seem that, given certain indispensable qualities, the true physician would be developed by extending his education so that he acquired the deeper knowledge and understanding that sprang from the humanities or science or whatever field drew nourishment from deep and widespread roots. He would thus acquire the proper result of education, a philosophy of life—what Sir Richard Livingstone called "the philosophy of the first rate"—the ability to know what was first rate. The trend towards the "family physician" as shown in group practice was an important factor in the production of the well-versed consultant or teacher, and should be accorded its due place in a consideration of the problem.

The Management and Treatment of the Chronic Asthmatic Patient.

R. S. STEEL (New South Wales) said that by asthma was meant the periodic attacks of dyspnoea of varying duration in which cardio-vascular renal disease could be excluded. Cough most frequently accompanied the dyspnoea, and a differential diagnosis of cough with or without sputum must be considered, since all who wheezed did not suffer from asthma. One classification of causes was into intrinsic causes due to infection and extrinsic causes coming from without. In the investigation of a case, a careful history was of the utmost importance, and should cover duration of attacks, time, place and season of their occurrence. Inquiry should be made into the family history for allergic phenomena or other manifestations of allergy in the individual. Hay fever preceded asthma in about 60% of cases, and the first decade of life was the maximum time for onset. A full and careful physical examination was essential in order to exclude other causes of dyspnoea. Examination of the upper respiratory tract for polypoid was often overlooked. Hypotension might frequently be found. X-ray examination of lungs and sinuses might help. Blood count might show eosinophilia. The diagnosis could mostly be made from the history and physical examination. In young children asthma often manifested itself in croup or multiple respiratory infections diagnosed as bronchitis. The frequency of onset of asthma after measles or whooping cough was noted.

Dr. Steel said that specific causes of asthma might be: (i) inhalants, such as pollens, dust, kapok, moulds; (ii)

ingestants—foods and drugs, such as aspirin and beer; (iii) bacterins, as in bronchitis and bronchiectasis; (iv) endocrine causes. In cases of seasonal asthma the cause was a pollen, usually a wind-borne pollen. The time of onset was September to January or February in New South Wales, when the grass and weed pollens were at a maximum. In cases of perennial asthma the causes were multiple, and house dust and infection (bacterins) were the commonest incriminating factors. Skin tests were employed to assist in determining the allergen to which the patient was sensitive. There was the immediate reaction to inhalants, as well as the delayed or tuberculin type of reaction in bacterin sensitivity. Scratch or intradermal tests were the types usually used in the study of asthma, but an inhalant test might be employed. Dr. Steel said that all tests should be performed by competent investigators only, and freshly prepared substances should be used. Tests must not be carried out during an attack or in a febrile individual or when adrenaline or antihistamines had been administered. Skin tests were not infallible, but must be used because they were the only method which could get a close approximation to the solution of the allergic problem; therefore they must be carefully controlled. All forms of skin testing in allergy were best regarded as furnishing confirmatory rather than final evidence. Positive skin reactions might bear no relation to the clinical picture, and therefore skin-test findings and clinical history must be carefully correlated for proper treatment to be outlined. Non-specific causes were many and included fatigue, temperature changes (for example, draughts), fall in barometric pressure, temperamental upset, indigestion, constipation, intestinal worms, perfumes, smells and smoking. The physician should endeavour to find out whether an attack of asthma was precipitated by a specific or a non-specific cause. He should aim to keep the patient at his or her occupation, unless it was a dangerous one, by appropriate treatment, with as few interruptions (if any) as possible. If the patient did not recover or improve, a recheck should be made in an endeavour to find out if the directions to the patient's doctor or to the patient had been faithfully followed.

Turning to the treatment of the ambulatory asthmatic, Dr. Steel said that avoidance of the offending substance should cause cessation of symptoms; even partial avoidance including avoidance of non-specific causes as far as possible would help to some extent. Best results from specific hyposensitization came from the pollen-sensitive patient. Those who were sensitive to house dust responded well to treatment by subcutaneous injections of extracts of allergenic substances. Dr. Cyril Piper, of Adelaide, was employing a type of hyposensitization to proteolysed allergens over a short period. In his hands the method had given excellent results. It required expert administration and had the advantage of reducing the time of treatment and returning the individual to work with less time lost. Polypi should be removed from the nose and a good airway maintained. Vaccine therapy for bronchitis might be helpful. Bronchoscopic suction and also postural exercises should be performed in the presence of infection. Breathing exercises of the diaphragmatic type were important; when emphysema was present they provided an important method of helping the patient. Adequate clothing was important, including the wearing of wool and the use of hats in bronchitic subjects. Potassium iodide was prescribed for infections. Other drugs used were antispasmodics, antihistaminics, adrenaline (for personal use), oestrogens, ACTH and cortisone.

Dr. Steel defined *status asthmaticus* as a continuous state of dyspnoea occurring in the bronchial asthmatic. It was associated as a general rule with an infection (bronchitis, bronchiectasis or collapse), with nasal polypi, or with continuous exposure to the specific allergen. Psychogenic factors were too often blamed in such cases. Treatment included removal of the cause, if possible, administration of adrenaline, pituitrin and oxygen, prevention of dehydration and starvation by intravenous glucose and saline therapy, administration of adrenaline in a dosage of one minim per minute, bronchoscopic suction

with simultaneous administration of adrenaline, administration of aminophyllin, the provision of rest (for example, by administration of "Avertin", but not of morphine), the use of penicillin for infections and finally the use of ACTH.

IVAN MAXWELL (Victoria) said that it was of the greatest importance that a patient suffering from chronic asthma should have his symptoms reduced to a minimum, and perhaps entirely controlled, by the daily administration of a suitable medicine. A mixture containing potassium iodide (10 grains), theophyllin (three grains) or aminophyllin (three grains), ephedrine (0.5 grain), and phenobarbital (0.5 grain) given night and morning usually proved very helpful. Aspirin might be substituted for iodide in the mixture, but before that was done a careful inquiry must be made to be sure that the patient was not aspirin-sensitive. Adrenaline hydrochloride (1:1000) might be given hypodermically to control asthma not relieved by medicine; a dose of 0.5 millilitre repeated in thirty minutes was usually effective, but might have to be further repeated during the day and night according to the patient's needs. Adrenaline hydrochloride (10%) used in a nebulizer alleviated asthma of moderate intensity.

Ephedrine hydrochloride, "Neo-Epinine" and "Isuprel" were useful in giving symptomatic relief. Antihistaminics were disappointing therapeutically, though of great value in the treatment of hay fever, which might be the forerunner of asthma.

It was essential that the patient should have reasonably good sleep at night. Phenobarbital (one grain) or "Seconal" (1.5 grains) or "Amytal" (three grains) was usually an effective hypnotic.

Antibiotics should be used for the control of infection in the upper and lower parts of the respiratory tract. Penicillin was of great value but had to be used with caution, as some asthmatics were penicillin-sensitive, and serious allergic reaction might follow its injection. The oral use of "Achromycin", "Aureomycin", "Terramycin" or "Chloromycetin" should be preceded by testing cultures of the microorganisms for sensitivity to those drugs.

Despite all the measures mentioned, the patient's asthma might continue in a chronic intractable form. In such circumstances hydrocortisone should be given, in a dosage of 60 milligrammes every six hours, and gradually reduced to a maintenance dose determined by trial and error. It might have to be continued for months or even years. A careful watch should be kept for undesirable side action of the drug.

For status asthmaticus large doses of adrenaline hydrochloride (1:1000) might have to be administered. If that failed, aminophylline might be tried, given intramuscularly or intravenously. Should that not be effective, then adrenocorticotrophic hormone (ACTH), 40 international units every twenty-four hours given intravenously in 5% glucose solution, or as an alternative, large doses of hydrocortisone, 60 milligrammes every six hours, might be administered by mouth.

Morphine must on no account be given.

R. H. O. DONALD (Victoria) said that it was necessary to consider, among other things, the allergic and pathological conditions that were frequently found in the upper part of the respiratory tract. In studying the nose and nasal sinuses of these patients, the following would be a suitable classification of the lesions frequently found: (a) purely allergic conditions—seasonal, perennial or perennial with an added seasonal incidence; (b) allergic conditions with superadded infection; (c) purely infective conditions.

In cases of chronic asthma the purely allergic type of nose was not often found, but it was common to find the allergic type with superadded infection and the purely infective type. The conditions of the nose most commonly seen were, firstly, perennial hay fever or vasomotor rhinitis, frequently with superadded infection and sometimes with nasal polyposis, and, second, hyperplastic rhinitis with polyposis; those conditions nearly always became chronic because of their perennial nature.

The ciliated mucous membranes lining the nose and nasal sinuses were of great importance, and a thorough study should be made of the anatomy, histology, physiology and pathology of those ciliated membranes. The ciliated membrane was covered by a thin layer of mucus, and the cilia always beat in the one direction and moved the mucus along, together with the bodies of organisms and other debris. It was important that the muco-ciliary stream should be kept intact, as any break in the ciliated membrane led to banking up and stagnation of the mucus. The cilia often were unable to move the mucous stream over scars in the membranes, and the stagnation which thus occurred predisposed to secondary infection.

In recent years operations on the nose and sinuses had not been as tissue-destroying as in the past; most modern surgeons endeavoured to interfere with the normal ciliary action as little as possible. When disease interfered with the action of the cilia, the mucous stream could not be moved along in the normal physiological manner. Every effort should be made to restore the ciliated membrane to normal. That was done firstly by medical means. Allergic conditions, if present, should be treated by avoidance of allergens and desensitization. Infection should be treated with penicillin and antibiotics. If nasal drops were prescribed, they should be in an isotonic medium, as oily drops interfered with the action of the cilia. The Proetz method of nasal drainage would often give considerable benefit in the treatment of diseased nasal sinuses.

If surgery had to be resorted to, in the first place, it should be as simple as possible. A series of antral wash-outs and culture of the washings followed by appropriate antibiotic therapy would be sufficient to bring benefit in many cases. When nasal polypi were present, they should be removed, and if a deviated nasal septum was obstructing the nasal airway, a submucous resection of the septum could be considered; that frequently led to improved nasal aeration and more efficient drainage of diseased ethmoid cells. Submucous resection of enlarged inferior turbinates was occasionally necessary, but it left a scar in the ciliated membrane which might interfere with the muco-ciliary stream.

Cases of chronic asthma in which major operative treatment on the nasal sinuses was needed were not very common, and every effort should be made to bring about resolution without resort to major surgery. If major surgery had to be undertaken, it was vital to ascertain that subjects with asthma were not aspirin-sensitive. For a few chronic asthmatics it was necessary to consider major sinus surgery; and when that was undertaken, it was considered that the operations recommended by Van Alvea and Shambaugh were most likely to benefit the patient. The Francis method of very light linear cauterization of the nasal septum would frequently benefit a considerable number of chronic asthmatic patients; if it was carefully carried out as recommended by Francis, the asthma could sometimes be controlled over a considerable period.

H. T. ILLINGWORTH (Western Australia) referred to the necessity for cutting down on the over-use of drugs. He said that in his practice in Kalgoorlie he had found the use of morphine, strychnine and atropine (one-quarter or one-sixth of a grain) valuable as a sedative in cases of asthma. Occasionally reference of a patient to a psychiatrist was advisable. The use of "Frano" and "Tedra" tablets was helpful at times. Dr. Illingworth mentioned a patient who in each attack knew that he would not recover for eight weeks.

C. T. PIPER (South Australia) said that Dr. Steel had mentioned some work done by him, and he thought he should explain it. The story was that by the intradermal injection of proteolysed allergens they now expected to suppress allergic asthma in one to three weeks by three to seven treatments, the average being five in two weeks. In a carefully observed, recorded and followed up assessment of 220 patients in a year, they had had that prompt result in 70% of asthmatics so treated. Expected grass-pollen asthma was prevented by as few as three early seasonal treatments, and 55 of 72 of those patients had

adequate relief in the spring of 1954. Flower-pollen asthma usually responded in three days; animal and domestic asthma responded well also. Dr. Piper said that five children suffering from persistent disabling asthma of long duration, who had been treated by that method a year previously, had remained well. The other classical allergic diseases, allergic rhinitis, urticaria and dermatitis, responded in the same way and in the same percentage of cases. The results in grass pollinosis had been confirmed in a field trial by the Department of Medicine at the University of Adelaide. Dr. Piper said that he had prepared a preliminary report on the subject in September, 1954, and it had been published in *THE MEDICAL JOURNAL OF AUSTRALIA* of February 26, 1955; a final report had been presented to the Society of Allergists in the week before the Congress. That report had been severely criticized by two of the speakers on the grounds of lack of controls and lack of application of statistical method. Dr. Piper said that the former had been admitted in his paper, and explained by the fact that his objective was to relieve the patients by a method that he knew would rapidly control the hypersensitivity for most of them; he could not in conscience deny them that relief. On the statistical side, his answer was that one could not apply statistics to a symptom. The second answer was that such results had never been gained by any allergist by any desensitizing method before, nor anything approaching them. Some 90 illustrative cases had been described in the report; full documentation might be seen in Adelaide, and interviews arranged with patients. At least 1200 people had had the treatment in the last two years. Dr. Piper said that he had carried the matter as far as he could, and it was therefore his duty to publish it, so that it might come to the notice of those who had the facility and capacity for investigating it further.

Dr. Steel, in reply to Dr. Illingworth, suggested that his patient who knew that he would not be better for eight weeks on each occasion would be better referred to a psychiatrist. Although no harm had so far come by the use of morphine in Dr. Illingworth's hands, one day he would have a sudden death due to its administration to an asthmatic patient. Referring to the asthma clinic attached to the Department of Education of New South Wales, Dr. Steel said that it had been started by an ear, nose and throat surgeon who developed a technique for the treatment of deafness by intranasal antrostomy, inhalations and bed rest. Whilst treating certain asthmatics who were deaf, he had noted an alleviation of the asthma, and had then treated all asthmatics in that way irrespective of any antral infection. That surgeon had then been put in charge of a so-called asthma clinic which was started by the Department of Education for the treatment of asthmatic school children, but the antrostomy was stopped. The children were made to remain at home, mostly in bed, for three to six months, and to go to bed if any sign of a cold developed and to use inhalations. Dr. Steel said that it would certainly be the best thing for every person to go to bed if he developed a coryza, but it would be a great loss of time; it would be a serious loss of time in the child's schooling, when the aim should be to keep the child at school when possible. No skin tests and no allergic investigations at all were carried out in that government-sponsored clinic. Dr. Steel said that he humbly suggested that the clinic was not based upon a firm foundation. Of the 141 patients mentioned, "no child showed no improvement"; but then there were no controls, and the children were all put to bed for the slightest symptom. In his opinion the clinic was an economic catastrophe, which if privately administered would collapse in a very short time.

Dr. Donald, in reply to Dr. Illingworth, said that he could not agree that morphine, or morphine, strychnine and atropine, should be used in cases of severe asthma. Many patients might be relieved temporarily by an injection of morphine, but he had seen deaths occur in severe asthma, and in almost every case morphine or some other opium preparation had been used shortly before he was called in consultation. One might use morphine in many cases and "get away with it", but with its continued use it was likely that one would eventually have a number of

deaths on one's hands. Any patient with severe asthma was already labouring, and morphine being a respiratory depressant might be the final factor in tipping the balance in the wrong direction. Dr. Donald considered that the Education Department Clinic was putting the cart before the horse. In Dr. Donald's opinion, the very large majority of cases of asthma were primarily allergic in origin, and the infective factors were secondary to that allergy. Dr. Donald agreed that, if colds and upper respiratory tract infections were avoided, the incidence of asthmatic attacks would be lessened, but he considered that it was quite impracticable for the majority of patients to go to bed and stay there every time they had any sign of a cold. He considered that much more benefit would occur if young children were thoroughly investigated and treated along proper anti-allergic lines and if their resistance to infection was built up. Further, he thoroughly disagreed that double intranasal antrostomy would benefit many of those patients. In fact, in his opinion, it was a thoroughly bad operation to perform on the majority of allergic subjects. Dr. Donald agreed with Dr. Riley that it was essential to recognize asthma at an early stage and treat it properly, and he was sure that, if that was done, many patients would be saved much invalidism.

The Treatment of Nephrosis.

D. G. DUFFY (Victoria) said that the treatment of nephrosis (type 2 nephritis) was still empirical, as its aetiology remained unknown. Confinement to bed and excessive protein feeding did not seem to benefit the patient, nor did the intravenous use of serum or salt-poor albumin elevate the serum protein levels. Diuresis of a temporary nature generally resulted from intravenous infusing of salt-poor albumin or plasma substitutes such as "Dextran", while mercurial diuretics were of considerable assistance at times. The possibility of sodium depletion should be appreciated when salt restriction and mercurial diuretics were being used together.

The addition of cortisone and ACTH to the therapy of the disease had been of great advantage, although the mode of action would appear to be of a relatively non-specific character. The course of treatment extended over ten days with the use of either the ordinary ACTH (100 milligrammes daily) or the long-acting type such as "Androcort" (20 to 40 units daily). The course might be repeated if necessary, and sometimes with better results than on the first occasion.

Dr. Duffy pointed out that infection was still an important complication of nephrosis and, when involving the urinary tract, must be vigorously treated to obviate further renal damage. Sulphonamide prophylaxis should be given to all patients following recovery, to minimize the risk of streptococcal infection over the next year or so. In conclusion, Dr. Duffy said that the prognosis in nephrosis might be better than had been previously stated, owing perhaps to the reduction of secondary infection.

SIR CHARLES BLACKBURN (New South Wales) said that he was pleased to hear that Southey's tubes were advocated for the treatment of oedema in nephrosis. He had found them of great value in some selected cases. Antibiotics made septic complications less likely. Removal of large amounts of fluid by Southey's tubes might initiate a diuresis.

R. READER (New South Wales) said that the loss of protein in the urine was probably a relatively insignificant factor in reducing the total body protein to such a low level as was found in nephrosis. Very high cortisone dosage in some cases might produce beneficial results that were not attainable with lower dosage.

J. ISBISTER thanked Dr. Duffy for a common-sense presentation of the treatment of a very depressing disease. He said that it did appear that cortisone or ACTH offered a better chance of producing a remission than most of the other methods. However, any method in the treatment of this disease was difficult to assess, as it was prone to spontaneous remissions for no apparent reason. Dr. Isbister was pleased to hear that Dr. Duffy did not consider that

long bed rest was indicated. It did not seem to influence the course of the disease; and if the patient wished to be up and about, it was probably the best from a psychological point of view. Dr. Isbister said that he agreed with Dr. Duffy that nephrosis or nephritis type II of Ellis was a distinct entity from the nephrotic syndrome of the rapidly progressive form of nephritis type I Ellis. Accepting that distinction, Dr. Isbister asked Dr. Duffy whether he thought that cortisone was also indicated for the latter type when associated with gross oedema. Dr. Isbister said that he did not agree with routine tonsillectomy in cases of nephrosis, but that it should be recommended only for local reasons.

The Management of Portal Hypertension with Special Reference to Bleeding Oesophageal Varices.

C. R. BICKERTON BLACKBURN (New South Wales) discussed the management of patients with portal hypertension and bleeding oesophageal varices in terms of acute bleeding episodes, recurrent bleeding, and surgery. He said that in an acute bleeding episode the restoration of circulating blood volume and the control of the bleeding point were of prime importance, and, in regard to the former, it was recommended that transfusions be stopped when the haemoglobin value reached 10 grammes per 100 millilitres. Bleeding from oesophageal varices could be controlled by passing a triple-lumen, double-balloon tube into the patient's stomach and oesophagus, and maintaining tamponade by inflating the balloons. The cessation of bleeding was determined by gastric aspiration, and the patient might also be fed, through the gastric tube which passed through the two inflated balloons. Dr. Blackburn stressed the importance of removing blood from the alimentary tract and the limitation of ammonia production in the colon, in relation to the prevention of hepatic coma. He recommended the administration of cathartics, enemata and appropriate antibiotics, and said that prophylactic measures in regard to diet, alkali administration, and the avoidance of straining might help to limit recurrent bleeding.

Referring to patients with recurrent bleeding, Dr. Blackburn said that injection of varices through an oesophagoscope was preferable to transoesophageal ligation when definitive surgery could not be carried out.

Dr. Blackburn then mentioned some contraindications to surgery, and discussed the differentiation of extrahepatic from intrahepatic obstruction, with special reference to liver function tests, hepatic vein catheterization and splenograms. He regarded a spleno-renal, veno-venous anastomosis as the most useful operation to lower portal pressure, and said that, when it could not be carried out, a porta-caval anastomosis or palliative partial gastro-oesophagectomy might be recommended. Ligation of varices was rarely recommended as an emergency or as a palliative procedure. It was suggested that the creation of an anastomosis between the portal venous system and the hepatic venous system might be possible in some cases and might lower the portal pressure sufficiently to limit bleeding from varices.

Selection of Patients for Mitral Valvotomy.

J. K. MADDOX, B. C. SINCLAIR-SMITH and J. H. HALLIDAY (New South Wales) presented a paper on the selection of patients for mitral valvotomy, based on experience in 250 operations. They stated that the operation had thoroughly justified itself in selected cases; in experienced hands, it should not have an operative and post-operative mortality exceeding 4%. The decision to operate should rest finally with the cardiologist and the cardiac surgeon, but the general practitioner should know when surgery might be indicated. It was not indicated for patients with mitral stenosis who were symptom-free, or for those with fatigue unsupported by other symptoms. Faintness, dizziness and stabbing chest pain were also less reliable. Operation should be considered if the patient had an attack of pulmonary oedema, recurrent and recalcitrant "acute bronchitis", orthopnea and cough (relieved by sitting upright) or hæmoptysis. Right ventricular failure might quickly follow

a respiratory infection, rapid auricular fibrillation or other tachycardia, pulmonary thrombo-embolism or a recrudescence of acute rheumatism.

Significant signs, in association with the symptoms listed, were those indicating a pure or dominant mitral stenosis (a slapping mitral first sound, an absent or insignificant mitral systolic murmur, an opening snap and a rumbling mid-diastolic murmur often associated with a thrill). There might also be additional signs due to pulmonary hypertension. The signs had to be carefully looked for and assessed in relation to further evidence of other valvular involvement. The relative dominance of mitral stenosis or incompetence was very important and difficult, and demanded experienced assessment. The age of the patient or, more especially, of the lesion was also important.

Operation should not be undertaken in the presence of any congestive failure or evidence of active rheumatism. Careful operative preparation was important.

The anxiety of patients to undergo operation should not be allowed to influence a decision based on the criteria mentioned.

J. H. HALLIDAY (New South Wales) said that Dr. Maddox had summarized the present views of the staff of the Hallstrom Institute regarding the selection of patients for mitral valvotomy. Those views were the outcome of the study of many hundreds of patients with rheumatic heart disease in recent years. Over 300 of the patients had been submitted to surgery. The staff of the Institute met weekly to discuss problem patients, particularly in those borderline cases in which a final decision about whether to advise surgery or not was difficult to make. Surgical colleagues at the meetings not only were informed of such pre-operative dilemmas, but in return informed the physicians from time to time of unsuspected operative findings—a very salutary and necessary corrective for all concerned. An active follow-up system was allowing a gradual appraisal of the results to be made on a long-term basis. That was vital, as corrective surgery must be shown to benefit the patients by increasing their expectancy of life.

Dr. Halliday said that current literature on the subject was far from unanimous on certain major aspects, and it was obvious that much more experience, critically analysed, would have to be gained before any firm conclusions could be reached. At the moment the decision to advise operation was largely based on conclusions as to whether or not (i) pure or dormant mitral stenosis was present, (ii) the mitral stenosis was responsible for the presence of significant symptoms of cardio-vascular origin, (iii) the condition of the valve and allied structures was such that the function of the valve could be significantly improved by commissurotomy, and (iv) technically successful commissurotomy would be followed by such a degree of improvement in the clinical state that the natural history of the disease would be materially influenced for the better. The present belief at the Institute was that by careful integration of the history, physical signs and X-ray and electrocardiographic findings, and at times cardiac catheterization, it was possible in the great majority of instances to select patients who would significantly benefit from operation.

The Use of D.A.P.T. in the Relief of Intractable Pain and Respiratory Depression.

A. SHULMAN (Victoria) read a paper on intractable pain and respiratory depression. He said that the adequate relief of severe and prolonged pain was one of medicine's unsolved problems. Many attempts had been made to prepare mixtures of opiates with opiate antagonists, which would afford complete analgesia in the absence of the toxic side-effects of the opiate, such as respiratory depression, vomiting, constipation, and the onset of tolerance and addiction. Several workers claimed to have produced such combinations using mixtures of morphine or "Levorphan" with the opiate antagonists "Nalorphine" and "Levallorphan"; but those results had not been reproducible, and indeed other workers had stressed the dangers of such mixtures.

Dr. Shulman then discussed the introduction into clinical medicine of a new substance which was a discovery of the University of Melbourne—namely, 2,4-diamino-5-phenyl-thiazole hydrochloride (D.A.P.T. or "Daptazole")—which had been successfully combined with morphine to produce adequate analgesia in the absence of morphine side-effects. He outlined its important pharmacological and clinical properties, which included its value as a morphine and barbiturate antagonist, and as a respiratory stimulant. He stressed the great safety of therapeutic doses of D.A.P.T., and suggested further clinical applications of the drug—for example, in anaesthesia, obstetrics and "medical shock". He discussed results obtained in some of the suggested fields.

Dr. Shulman presented a comparison between D.A.P.T. and "Nalorphine" and "Levallorphan" as morphine antagonists and as respiratory stimulants; it indicated that D.A.P.T. was a preferable substance for those purposes. In conclusion he said that the high therapeutic index (about 10) and almost complete lack of side-effects of D.A.P.T. should permit its wide application in the fields of medical treatment.

Middle Lobe Syndrome.

MAURICE JOSEPH (New South Wales) read a paper entitled "Middle Lobe Syndrome". He said that the symptoms were hæmoptysis or recurrent febrile episodes based on bronchiectatic and often atelectatic changes in the middle lobe of the right lung, but that those changes occurred in other lobes; the reason for calling the syndrome a middle lobe one was that the condition was so often overlooked there, because a collapsed middle lobe could easily be missed in X-ray photographs. The collapsed middle lobe was often reported as an enlarged hilar shadow; and if that was combined with a hæmoptysis, the diagnosis of bronchial carcinoma might easily be made.

Dr. Joseph said that a lordotic position best revealed the collapsed middle lobe. The bronchus of the middle lobe was long and slender, and there was a large lymph node in the angle between it and the stem bronchus, so that any enlargement of the node would compress it. Any infection, not necessarily tuberculous, could cause enlargement of the node, and, moreover, a mucous plug could also set up the condition. One of the surprising features was latency—the bronchiectatic condition usually developed in childhood, yet symptoms might not present for fifty years. Bronchograms would reveal the condition.

A. H. PENINGTON (Victoria) said that Dr. Joseph had emphasized the origin of lobar collapse in childhood. Dr. Penington said that it arose because of (a) the small diameter of the bronchus and (b) the soft bronchial walls. Obstruction was due to mucus or to external pressure. In Australia a tuberculous bronchial gland might not be the commonest cause. In infancy and childhood vigorous treatment was essential. In adult life, the condition was frequently discovered as the result of mass X-ray surveys when it had not been suspected. It might be mistaken for active tuberculosis; three such cases had been encountered at a sanatorium in one afternoon. Dr. Penington emphasized that the syndrome did not always arise when the middle lobe was collapsed. Reexpansion of such a collapsed lobe in adults was not rare. Operation should not be performed in the absence of symptoms; in adults it might be technically very difficult.

K. HIRSCHFELD (Queensland) said that the enlarged hilar glands might press on the bronchi of the lower lobe of the left lung and the lingula, as well as on the right middle lobe bronchus. It was desirable to prevent the development of bronchiectasis by early discovery of atelectasis in childhood. The chests of all children should be radiologically examined after pertussis or bronchitis.

KONRAD HIRSCHFELD (Queensland) said that Dr. Joseph had pointed out that the middle lobe syndrome was often due to non-tuberculous enlargement of the lymph nodes, and similar lesions were seen in other lobes. Dr. Hirschfeld thought it should be realized that they were common. Frequently when bronchiectasis on the left side was being dealt with, enlarged nodes were found in the angle between

the lingula bronchus and the lower lobe bronchus. That enlargement could often be suspected from the bronchogram, in which the curved inclination of the bronchi by the node could be seen. It was evident in such cases that the narrowing so caused played a part in the development of the bronchiectasis. It was clear that in such cases the apical branch of the lower lobe was not narrowed by such nodes, and that was probably why that common pattern of bronchiectasis occurred.

Dr. Hirschfeld went on to say that the fact that the lingula and lower lobe syndrome was not well known as such, while that in the middle lobe was, was almost certainly due to the better drainage of the middle lobe. For that reason infection was less common; whereas on the left side the segments involved were poorly drained in natural postures, infection was more common, and therefore the patients presented with well-marked symptoms of bronchiectasis. Dr. Penington had pointed out that enlargement of the nodes might occur from any of the infections which involved the lungs, such as whooping-cough. Dr. Hirschfeld said that it was no good recognizing that such things occurred unless they were prepared to do something about them. It was the duty of clinicians to see that all children suffering from whooping-cough, measles or other infection masquerading as bronchitis were radiologically examined after their attack, and given treatment unless their X-ray films revealed no abnormality. Unless that was done, the infected right middle lobe would present as the middle lobe syndrome in due course, and the usual bronchiectasis on the left side would continue to occur.

Dr. Hirschfeld finally said that it was disturbing to him that speakers referred to the vulnerability of the right middle lobe, because in fact its bronchus was rather less liable to pressure than the lingula or lower lobe on the left side, where the angle of those bronchi was easily filled by an enlarged node.

Phenylbutazone ("Butazolidin") and Cortisone in Rheumatoid Arthritis.

MICHAEL KELLY (Victoria) read a paper in which he compared phenylbutazone ("Butazolidin") and cortisone in the treatment of rheumatoid arthritis. He said that they resembled each other in three ways: (i) by their suppression of rheumatic inflammation of joints, (ii) by the liability to relapse after symptoms had been suppressed by their use, and (iii) in two toxic effects—fluid retention and gastro-intestinal ulceration. Phenylbutazone should not be given to people aged over sixty-five years or to those with cardiovascular or alimentary disorders. When it was given in daily doses of 0.3 gramme, its antirheumatic activity was equal to or better than that of 0.6 gramme. That amount could usually be reduced to 0.2 gramme in the first week. Those doses gave satisfactory blood levels of the drug; their toxicity for selected patients was seldom dangerous, and was almost negligible after the first five weeks. The toxicity of phenylbutazone was proportional to the dose.

Dr. Kelly went on to say that the antirheumatic activity of cortisone, unlike that of phenylbutazone, was proportional to the dose. The commencing dose should not be greater than 0.1 gramme daily, and the maintenance dose even for younger patients should not exceed 0.075 gramme per day. The dose should be the lowest which relieved the patient of pain. Prolonged treatment even with those doses was attended by dangerous and fatal effects on many different tissues. Relapses were common in patients who had been relieved with cortisone. Sometimes the initial suppressive dose failed to keep the symptoms in check when the patient made a greater effort than usual. More commonly a relapse followed gradual reduction of the dose. The relapse should not be overcome by increasing the dose, but by withdrawing the drug for a week and starting again. Cortisone was destroyed very rapidly, and the body was sensitive to a sudden fall below the therapeutic level.

Dr. Kelly then said that phenylbutazone relapses were due to overdosage more commonly than to underdosage. Overdosage caused a refractory state, which was not overcome but intensified by increasing the dose. It could be

overcome by one to four weeks' withdrawal. After a relapse due to underdosage, a week's withdrawal was necessary. All patients who had once responded to phenylbutazone would respond again after a sufficient interval. Phenylbutazone was destroyed very slowly, and the blood level fell by 15% per day. Thus it usually had not a severe withdrawal reaction like that which followed cortisone. Dr. Kelly said that of 87 rheumatoid arthritic patients who had been treated with cortisone during the past three and a half years, nine were still taking it and 32 had changed to phenylbutazone. In all, 460 polyarthritic patients had been treated with phenylbutazone, which was more reliable and frequently altered the course of the disease for the better. In many cases it had been tapered off to a tiny maintenance dose or to nothing; complete remissions were common. The two drugs should not be used together, but might be used alternately. Cortisone and ACTH were too dangerous for prolonged treatment, but cortisone was sometimes useful to supplement phenylbutazone during unavoidable breaks in treatment.

R. G. ROBINSON (New South Wales) said that one inference must be drawn from Dr. Kelly's findings and comments: although the two substances produced a somewhat similar response in the patient's condition, their modes of action were vastly different. It was significant that the rheumatoid process might be made worse or unaffected by large doses of phenylbutazone, but yet might later respond to small doses. It was more important to note that the toxic side effects occurred more frequently with large dosage, and that, although they might occur in the first six weeks or so of treatment, their frequency of occurrence diminished rapidly with increasing duration of the treatment. Dr. Robinson thought that under those circumstances the appearance of toxic side effects was inversely proportional to the improvement in the patient's condition. From that, and from the subject of the paper, the inferences were, first, that phenylbutazone was, as Dr. Kelly had said, antirheumatic in action, and second that, despite the benzene ring, the common side effects were due to the disease process or to the disease-drug combination, and not to the drug itself, since the toxic effects were seen in the early but not in the late stages of therapy. Such an exacerbation occurred in rheumatoid arthritis treated with large doses of gold, and would not occur if the dose was reduced. That phenomenon might be due to the liberation by the phenylbutazone, acting directly, of antigen from the cell or from the cell wall to the tissue spaces, where the reaction of antigen with its specific antibody would produce inflammatory products directly proportional to the liberation of antigen.

Dr. Robinson went on to say that examination of the adrenal steroids presented another picture. It was known that they would not cure rheumatoid arthritis, but would temporarily protect the joints from damage. In that case "toxic effects" were proportional to the dose, to the innate sensitivity of the patient and to the duration of treatment; that was a direct and not an inverse relationship. Direct titration of cortisone against the volume of the antigen-antibody reaction under suitable conditions might maintain the disease in equilibrium—a valuable aid. Further, as the duration proceeded, there might develop, more quickly in females at certain times, and less frequently in males, a condition of "late hypercortisolemia". That was evidently a partly toxic, partly suppressive manifestation. It was conceivable that, whereas the steroids had suppressed the symptoms and signs of rheumatoid arthritis, they had done nothing to suppress the causal antigen which, being self-perpetuating, built up to overflow the artificial cortisone barrier. Dr. Robinson said that he had not seen it reported in non-perpetuating diseases such as protein sensitivity asthma. Of the gravest importance was the news that "Meticorten" in a dosage of 30 milligrammes per day had induced an Addisonian crisis. Evidently the treatment had caused suppression of the adrenal function without supplying total replacement. Even with that new potent drug, and when allowance was made for side effects already reported, since the haematocrit readings did not improve and the erythrocyte sedimentation rate, which initially fell, rose again, late toxic sequelae might be

expected. Dr. Robinson said that when one realized that those drugs would soon be on the Australian market, and would be used promiscuously without due regard for their power, the picture was alarming to say the least.

Dr. Kelly, in reply, said that he agreed that toxicity was not the best word to describe the undesirable effects of cortisone, but he did not agree that those effects were physiological. Hyperadrenalism was not physiological, and it produced profound effects on many tissues. Many rheumatologists in many countries were worried about it, and it was not correct to say that most of the patients would have died if they had not been given cortisone. Fatal pneumonic consolidation sometimes followed the withdrawal of cortisone; the Medical Research Council had reported that a boy, aged twelve years, with a mild skin disorder, had died of *status asthmaticus* when the steroid was withdrawn. Dr. Kelly agreed that other factors, in addition to cortisone or phenylbutazone, were needed to produce peptic ulceration; but those factors were unknown, and the drug had been the precipitating factor in so many cases that its effect could not be denied.

Dr. Kelly went on to say that he was interested in Dr. Robinson's views on the pathogenesis of rheumatoid arthritis. There was no doubt that infection played a precipitating part in many cases; but in many others there had been no sign of infection. The mechanism which was set in motion by infection could in other cases start of itself.

(To be continued.)

Correspondence.

A NEW APPROACH TO OPERATIONS FOR PROLAPSE.

SIR: I write to congratulate Dr. J. C. Loxton on the initiative and enterprise displayed in his article on vaginal hysterectomy and repair for prolapse published in your Journal under the date of September 17, 1955, and I endorse many of his opinions and statements. It is very pleasing indeed to know that one of the younger generation of gynaecologists is taking up this work. We commenced this work, of course, at Saint George Hospital, Sydney, fifteen years ago (1941), and during the few years Dr. Loxton has been participating in this field I must say he has accomplished a great deal.

I find that many people in Australia and overseas are still unaware of the distinction in technique between the old-time vaginal hysterectomy operation for prolapse (that is, the Ward-Mayo operation and the original Heaney operation) and the modern one. The distinction is a matter of difference in surgical principles, as Dr. Loxton has pointed out, and as I have emphasized so often at meetings in Australia, America and England during the past six years. The basic principles of the modern vaginal hysterectomy for prolapse are Fothergill's principles of shortening and inturning the cardinal ligaments *plus* the utilization of the utero-sacral ligaments for the purpose of additional plastic repair, entirely free of any carrying-forward interposition technique to be found in the older methods. This additional utero-sacral ligament feature was the basis of my paper which was presented at the International Congress of Obstetrics and Gynaecology in New York in May, 1950.

In the evolution of the modern vaginal hysterectomy and repair operation for prolapse, it is interesting to note that the three largest English-speaking countries, England, America and Australia, have each originated one of the three essential components. England provided the world with Fothergill's principles of inversion of the cardinal ligaments, as already mentioned. America insisted that removal of the uterus was necessary in selected cases, and Australia combined both these factors, but stressed that, in addition, it was essential to utilize the utero-sacral ligaments in the plastic repair as a means of supporting the vaginal vault—the great weakness of the old operations. Australia was the first to emphasize and practise this addition to the treatment of prolapse. The Americans have fallen into line with the Australian operation. As those acquainted with this work know, most American gynaecologists now incorporate the utero-sacral ligaments as an additional step to their Heaney vaginal hysterectomy. This step was not a feature of the

original Heaney operation. Conservative England has been rather slower than America and Australia in departing from complete reliance on Fothergill's operation, though a few centres in England have been pressing hard for some time (so far with little success) for a revision of the surgical treatment of prolapse.

It is not suggested that the Manchester (Fothergill) operation should be discarded—far from it. It is still the operation of choice in early second-degree prolapse (without menorrhagia), but it most certainly does not give the same high percentage of permanent (I repeat permanent) cures for advanced prolapse as the modern vaginal hysterectomy. In my own series I have experienced one recurrence in fifteen years—a recurrence rate of about 0.25%.

It is remarkable that all text-books are always three or four years out of date. This, of course, is understandably and inevitably so. Even Percy Malpas's "new" book on "Genital Prolapse" (copies of which only arrived in Australia this week from London) is already four years out of date in its description of the modern vaginal hysterectomy and repair operation. The operation Percy Malpas describes under my name is different in quite a few technical details to the vaginal hysterectomy for *prolapsed uteri* which I performed as a demonstration operation on July 11, 1953, at Saint Mary's Hospital, Manchester, in that for some years now I have not been bringing any broad ligament stumps down to be united beneath the bladder neck.

There are probably few operations in surgery which give so much scope for deviations and additions to technique (without sacrificing surgical principles) as this modern vaginal hysterectomy. In the same way Dr. Loxton will probably find five years hence that he is performing a substantially different operation to the one he is now using. I will follow with interest the work of King George Hospital and wish its staff every success.

Yours, etc.,

Sydney,
September 26, 1955.

A. LESLIE WATSON.

ANTI-CANCER COUNCIL OF VICTORIA.

SIR: The Anti-Cancer Council of Victoria supports research into the cause and cure of cancer in that State. Applications for grants in support of research in this field, or for renewals of existing grants for the year 1956, should be forwarded to the Secretary, Anti-Cancer Council of Victoria, c/o. Fuller King and Company, 83 William Street, Melbourne, C.1, by October 21, 1955.

Yours, etc.,

E. V. KEOGH,
Medical Adviser and Secretary.
83 William Street,
Melbourne,
September 23, 1955.

Naval, Military and Air Force.

APPOINTMENTS.

THE undermentioned appointments, changes *et cetera* have been promulgated in the *Commonwealth of Australia Gazette*, Number 43, of September 8, 1955.

AUSTRALIAN MILITARY FORCES.

Citizen Military Forces.

Northern Command.

Royal Australian Army Medical Corps (Medical).—The age for retirement of 1/71801 Lieutenant-Colonel I. M. Mackerras is extended until 19th September, 1956.

Eastern Command.

Royal Australian Army Medical Corps (Medical).—2/226103 Captain R. H. Kaines is appointed from the Reserve of Officers, 28th June, 1955. To be Captain (provisionally), 29th July, 1955: 2/146605 John Dixon Hughes.

Southern Command.

Royal Australian Army Medical Corps (Medical).—3/82441 Major D. C. Cowling is seconded whilst in the United Kingdom, 8th December, 1954. 3/52320 Lieutenant-Colonel

J. N. Freedman, E.D., is appointed from the Reserve of Officers, and is borne supernumerary to the authorized establishment of Lieutenant-Colonels, with pay and allowances of Major (at own request), 25th May, 1955. 3/101833 Honorary Captain F. W. Shine is appointed from the Reserve of Officers, and to be captain (provisionally), 10th July, 1955. 3/50225 Captain G. S. Christie is appointed from the Reserve of Officers, and to be Temporary Major, 14th July, 1955.

Central Command.

Royal Australian Army Medical Corps (Medical).—The provisional rank of 4/35428 Captain K. F. Milne is confirmed. The following officers are seconded whilst undergoing post-graduate studies in the United Kingdom: Captains 4/32004 D. D. Beard, 22nd July, 1955, and 4/31955 J. G. Sweeney, 1st August, 1955. To be Captain (provisionally), 9th August, 1955: 4/32073 John Samuel Tweedale Cox.

Western Command.

Royal Australian Army Medical Corps (Medical).—5/38323 Captain H. L. McCay is transferred to the Reserve of Officers (Royal Australian Army Medical Corps (Medical)) (Western Command), 22nd July, 1955. To be Temporary Major, 29th July, 1955: 5/26459 Captain V. T. White.

Reserve Citizen Military Forces.

Royal Australian Army Medical Corps.

Eastern Command.—The notification respecting Captain R. H. Kaines, which appeared in Executive Minute No. 148 of 1954, promulgated in *Commonwealth Gazette* No. 51, of 1954, is withdrawn. To be Honorary Captains: Charles Albert Mills, 30th May, 1955, and Kenneth James Trevillian and Brian Meldrum Learoyd, 29th July, 1955.

Southern Command.—To be Honorary Captain, 20th June 1955: Charles James Maxwell Sizeland.

The College of General Practitioners.

QUEENSLAND FACULTY.

FIRST ANNUAL MEETING.

THE first annual meeting of the Queensland Faculty of the College of General Practitioners was held at British Medical Association House, Wickham Terrace, Brisbane, on Friday, September 2, 1955, at 4.30 p.m., Dr. STUART PATTERSON in the chair.

In addition to members, the meeting was attended by Dr. A. Talbot Rogers, of London, Dr. Mervyn Archdall (Editor of THE MEDICAL JOURNAL OF AUSTRALIA) and Dr. H. M. Saxby (Honorary Secretary of the New South Wales Faculty of the College of General Practitioners), to whom the chairman extended a very cordial welcome.

Annual Report for 1955.

The annual report of the Faculty for 1955 was received and adopted. The report is as follows.

Office Bearers for 1955.

Provost: Dr. Paul Hopkins.

Chairman of Faculty Board: Dr. Stuart Patterson.

Vice-Chairman: Dr. L. P. Winterbotham.

Honorary Secretary: Dr. B. N. Adsett.

Honorary Treasurer: Dr. A. J. Parer.

Chairman of Committees: Undergraduate Education, Dr. L. P. Winterbotham; member, Dr. Robert Miller. Post-Graduate Education, Dr. A. J. Parer. Research, Dr. Paul Hopkins; members, Dr. Ian Chenoweth, Dr. P. R. Delamothe.

The membership to September 2, 1955, is forty-one members and three associate members.

Undergraduate Education.

Two notable achievements by the Queensland Faculty have been: (a) Recognition by the University of Queensland in granting to the Faculty of the College a seat on the University of Queensland Faculty of Medicine. This will be the first time a general practitioner has had such a seat except at such times as the President of the British Medical Association has been a general practitioner. (The President of the British Medical Association is an ex-officio member

of the University of Queensland Faculty of Medicine.) This will enable general practitioners to have a voice in university undergraduate medical education. (b) The setting up of a panel of one hundred general practitioners who have offered to participate in an apprenticeship scheme to train students during vacation. The University of Queensland Faculty of Medicine has approved the scheme, and it is hoped that it will be in operation during the long vacation of 1955-1956.

A short course of lectures in methods of general practice is already given to final year students of the University of Queensland by Dr. L. P. Winterbotham.

Post-Graduate Education.

The Queensland Faculty of the College has also gained representation on the Queensland Post-Graduate Medical Education Committee. It is hoped this will result in post-graduate medical education being better adapted to the needs of general practitioners. The need is for regular post-graduate refresher courses at different centres throughout the State which will enable the majority of general practitioners to attend such courses at regular intervals.

The Professor of Medicine at the University of Queensland (Dr. J. W. H. Tyrer) has also offered to provide facilities for post-graduate instruction with thirty beds under his care at the Brisbane General Hospital.

Research Committee.

A panel has been set up of six of the State's leading research workers to advise and assist members of the Faculty of the College for general practitioner research.

Formation of an Australian College.

A meeting between representatives of the New South Wales and Queensland Faculties has taken place and a *pro tem.* Council of the College has been set up. This Council will coordinate, stimulate and supervise the work of the College in Australia.

STUART PATTERSON,
Chairman.

British Medical Association House,
225 Wickham Terrace,
Brisbane, B.17.

Officers of the Faculty, 1955-1956.

The following office bearers for 1955-1956 were elected:

Provost: Dr. Paul Hopkins.

Chairman of Faculty Board: Dr. Stuart Patterson.

Vice-Chairman: Dr. L. P. Winterbotham.

Honorary Secretary: Dr. W. J. Hamilton.

Honorary Treasurer: Dr. A. J. Parer.

Chairman of Committees: Undergraduate Education, Dr. L. P. Winterbotham; Post-Graduate Education, Dr. A. J. Parer; Research, Dr. Paul Hopkins.

Members of Faculty Board, 1955-1956: Dr. Paul Hopkins, Dr. Stuart Patterson, Dr. L. P. Winterbotham, Dr. B. N. Adsett, Dr. A. J. Parer, Dr. Ian Chenoweth, Dr. Robin Spark, Dr. W. J. Hamilton.

ANNUAL DINNER.

The second annual dinner of the Queensland Faculty of the College of General Practitioners was held at the United Service Club, Wickham Terrace, Brisbane, at 6.15 p.m. on September 2, 1955, following the annual meeting.

Invited guests present were Dr. A. Talbot Rogers (representing the British Medical Association, London), Dr. A. Fryberg (Director-General of Health and Medical Services), Professor H. J. Wilkinson (Dean of the Faculty of Medicine), Dr. H. R. Love (Chairman, State Committee, The Royal Australasian College of Physicians), Dr. K. B. Fraser (Chairman, State Committee, Royal Australasian College of Surgeons), Professor G. Shedden Adam (Chairman, State Committee, Royal College of Obstetricians and Gynaecologists), Professor Neville Sutton (Professor of Surgery), Dr. A. V. Meehan (Chairman, Post-Graduate Medical Education Committee), Dr. E. H. Derrick (Deputy Director, Queensland Institute of Medical Research), Dr. W. A. Conolly (Chairman, New South Wales Faculty of the College of General Practitioners) and Dr. H. M. Saxby (Honorary Secretary of the New South Wales Faculty of the College of General Practitioners).

Dr. Stuart Patterson, Chairman of the Queensland Faculty of the College, after welcoming the visitors, proposed the

DISEASES NOTIFIED IN EACH STATE AND TERRITORY OF AUSTRALIA FOR THE WEEK ENDED SEPTEMBER 17, 1955.¹

Disease.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Northern Territory.	Australian Capital Territory.	Australia.
Acute Rheumatism	1(1)	3(2)	2(1)	..	..	..	..	..	6
Amoebiasis .. ..	..	..	..	..	..	..	..	..	..
Ancylostomiasis .. ..	..	..	..	..	..	..	..	..	..
Anthrax .. ..	..	..	..	..	..	..	..	..	..
Bilharziasis .. ..	..	..	..	..	..	..	..	..	..
Bonefistosis .. ..	..	2(1)	..	..	..	..	..	..	2
Cholera .. ..	..	..	..	..	..	..	..	..	..
Chorea (St. Vitus) .. ..	..	..	..	..	..	..	..	..	..
Dengue .. ..	..	..	..	..	..	..	..	..	..
Diarrhoea (Infantile)	2(1)	11(10)	1(1)	..	..	..	..	..	14
Diphtheria	1	..	5(1)	3(3)	5(3)	..	..	..	14
Dysentery (Bacillary) .. ..	..	..	3	..	..	..	..	..	3
Encephalitis	1	1(1)	..	1(1)	..	..	..	..	3
Etiarthritis .. ..	..	..	..	..	..	..	..	..	..
Homologous Serum Jaundice .. ..	..	..	..	..	..	..	..	..	..
Hydatid .. ..	..	..	..	..	..	3(1)	..	..	3
Infective Hepatitis	44(13)	68(32)	..	7(1)	4	..	..	1	124
Lead Poisoning .. ..	..	..	..	..	..	..	..	..	..
Leprosy .. ..	..	..	..	..	1(1)	..	..	..	1
Leptospirosis .. ..	..	..	2	..	..	..	..	..	2
Malaria .. ..	..	..	2(2)	..	..	..	..	..	2
Meningococcal Infection	3	3(2)	1	..	..	1(1)	..	..	8
Ophthalmia .. ..	..	..	..	..	..	..	..	..	..
Ornithosis .. ..	..	..	..	..	..	..	..	..	..
Paratyphoid .. ..	..	..	..	..	..	..	..	..	..
Ragae .. ..	..	..	..	..	..	..	..	..	..
Polymyositis	3(1)	..	1(1)	2(1)	2	..	..	..	8
Periperal Fever .. ..	..	..	..	..	..	..	..	..	..
Scarlet Fever .. ..	..	33(29)	1(1)	..	1(1)	..	..	..	35
Scrub Typhus	15(9)	14(9)	30(12)	10(7)	..	2	..	..	71
Smallpox .. ..	..	..	..	..	..	..	..	..	..
Tetanus .. ..	..	2(1)	..	..	..	..	..	..	2
Trachoma .. ..	..	..	..	..	3(1)	..	..	..	3
Trichinosis .. ..	..	..	..	..	..	..	..	..	..
Tuberculosis	37(28)	20(16)	..	3(1)	5(4)	3	..	..	68
Typhoid Fever	1	..	..	..	..	..	..	..	1
Typhus (Flea-, Mite- and Tick-borne) .. ..	..	..	..	..	..	..	..	..	..
Typhus (Louse-borne) .. ..	..	..	..	..	..	..	..	..	..
Yellow Fever .. ..	..	..	..	..	..	..	..	..	..

¹ Figures in parentheses are those for the metropolitan area.

toast of the British College, coupled with that of the New South Wales Faculty. Dr. A. Talbot Rogers and Dr. W. A. Connolly responded.

Obituary.

NOEL ALEXANDER GILLESPIE.

A PERSONAL FRIEND who wishes to remain anonymous writes:

Noel Gillespie, M.A., D.M., D.A., F.F.A.R.C.S., perhaps the most colourful personality in international anaesthetics, died suddenly at Madison, Wisconsin, on August 21, 1955. He was born circa 1904, of American and Alsatian parentage. His childhood was spent at an American mission school at Jebail, in Syria, where his reading was guided by a young archaeologist, the future "Lawrence of Arabia". He was further educated at an English public school and at Oxford. As an undergraduate he worked with Schweitzer at Lambarene in the Congo, and with Clayton at "Toc H" in London. After graduation he rose to be honorary anaesthetist to the London Hospital.

In 1938 he went to Wisconsin as associate professor to R. M. Waters. He contributed many papers to British and American journals. His book, "Endotracheal Anaesthesia" (1941), is a standard text, which has been translated into German. He was a co-author of "Chloroform" (1951), that fine study by the Wisconsin group of workers. He acted as American editor of the *British Journal of Anaesthesia*. After 1948 he withdrew himself from clinical work to engage in Hollerith recording, being responsible for the admirable statistical surveys put out annually by the department of anaesthetics of the Wisconsin General Hospital.

Gillespie's extra-academic work was as important as his academic. He was a tireless worker for "Toc H", for the Boy Scout movement, and for the social welfare of Wisconsin undergraduates. Rifle-shooting, for which he gained national trophies, served him as an avenue to the confidence of youth. He was a cultured man who spoke French and German and kept up his Latin and Greek. As befitted a pupil of Schweitzer, he was a competent musician, with special interest in the works of J. S. Bach.

Sir Robert Macintosh once wrote that Noel Gillespie should have been put upon the road as a permanent ambassador of international anaesthetics. With his death the specialty loses a valuable servant. The world at large loses an idealist, eager for social justice, for non-technical education in a grimly technical age, and for international goodwill.

Australian Medical Board Proceedings.

NEW SOUTH WALES.

THE following have been registered, pursuant to the provisions of the *Medical Practitioners Act*, 1938-1955, Section 17 (1) (a), as duly qualified medical practitioners: Bushby, Normal Russell, M.B., B.S. (Univ. Melbourne), 1952; Gilsenan, Leon Desmond, M.B., B.S. (Univ. Melbourne), 1950; Allen, Lucius, M.B., B.S. (Univ. Queensland), 1949; Grewar, Lais, M.B., B.S. (Univ. Adelaide), 1952; Russell, Maurice, M.B., B.S. (Univ. Queensland), 1951.

The following have been registered, pursuant to the provisions of the *Medical Practitioners Act*, 1938-1955, Section 17 (1) (b), as duly qualified medical practitioners: Seagrim, Elizabeth Gallie, M.B., Ch.B. (Univ. Glasgow), 1943; Brown, Henry Macholin Ottway, L.A.H. (Univ. Dublin), 1952; Gibson, Edwin Charles, M.R.C.S. (England), 1943, L.R.C.P. (London), 1943, F.R.C.S. (England), 1952; Heron, Robert James Alexander, M.B., B.Ch. (Univ. Belfast), 1939; Fee, William Hubbard, M.B., B.Ch. (Univ. Belfast), 1937.

The following has been registered, pursuant to the provisions of the *Medical Practitioners Act*, 1938-1955, Section 17 (2), as a duly qualified medical practitioner: De Marchi, Mario, M.D. (Univ. Rome), 1930.

Medical Appointments.

Under the provisions of the *Quarantine Act*, 1908-1950, Dr. Leonard Clive Jessup and Dr. Peter Roylance Delamontis have been appointed Quarantine Officers at Port Pirie, South Australia, and Bowen, Queensland, respectively.

Dr. N. G. Marshall has been appointed Director of Anaesthesia at the Royal Adelaide Hospital.

Dr. B. R. Walsh has been appointed Medical Registrar at the Royal Adelaide Hospital.

Diary for the Month.

- Oct. 8.—Victorian Branch, B.M.A.: Sir Richard Stawell Oration.
- Oct. 11.—New South Wales Branch, B.M.A.: Organization and Science Committee.
- Oct. 11.—New South Wales Branch, B.M.A.: Executive and Finance Committee.
- Oct. 14.—Tasmanian Branch, B.M.A.: Branch Council.
- Oct. 17.—Victorian Branch, B.M.A.: Finance Subcommittee.
- Oct. 18.—New South Wales Branch, B.M.A.: Medical Politics Committee.
- Oct. 19.—Western Australian Branch, B.M.A.: General Meeting.
- Oct. 20.—New South Wales Branch, B.M.A.: Clinical Meeting.
- Oct. 20.—Victorian Branch, B.M.A.: Executive of Branch Council.

Medical Appointments: Important Notice.

MEDICAL PRACTITIONERS are requested not to apply for any appointment mentioned below without having first communicated with the Honorary Secretary of the Branch concerned, or with the Medical Secretary of the British Medical Association, Tavistock Square, London, W.C.1.

New South Wales Branch (Medical Secretary, 135 Macquarie Street, Sydney): All contract practice appointments in New South Wales.

Queensland Branch (Honorary Secretary, B.M.A. House, 225 Wickham Terrace, Brisbane, B17): Bundaberg Medical Institute. Members accepting LODGE appointments and those desiring to accept appointments to any COUNTRY HOSPITAL or position outside Australia are advised, in their own interests, to submit a copy of their Agreement to the Council before signing.

South Australian Branch (Honorary Secretary, 80 Brougham Place, North Adelaide): All contract practice appointments in South Australia.

Western Australian Branch (Honorary Secretary, 205 Saint George's Terrace, Perth): Norseman Hospital; all contract practice appointments in Western Australia. All government appointments with the exception of those of the Department of Public Health.

Editorial Notices.

MANUSCRIPTS forwarded to the office of this journal cannot under any circumstances be returned. Original articles forwarded for publication are understood to be offered to THE MEDICAL JOURNAL OF AUSTRALIA alone, unless the contrary be stated.

All communications should be addressed to the Editor, THE MEDICAL JOURNAL OF AUSTRALIA, The Printing House, Seamer Street, Glebe, New South Wales. (Telephones: MW 2651-2-3.)

Members and subscribers are requested to notify the Manager, THE MEDICAL JOURNAL OF AUSTRALIA, Seamer Street, Glebe, New South Wales, without delay, of any irregularity in the delivery of this journal. The management cannot accept any responsibility or recognize any claim arising out of non-receipt of journals unless such notification is received within one month.

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